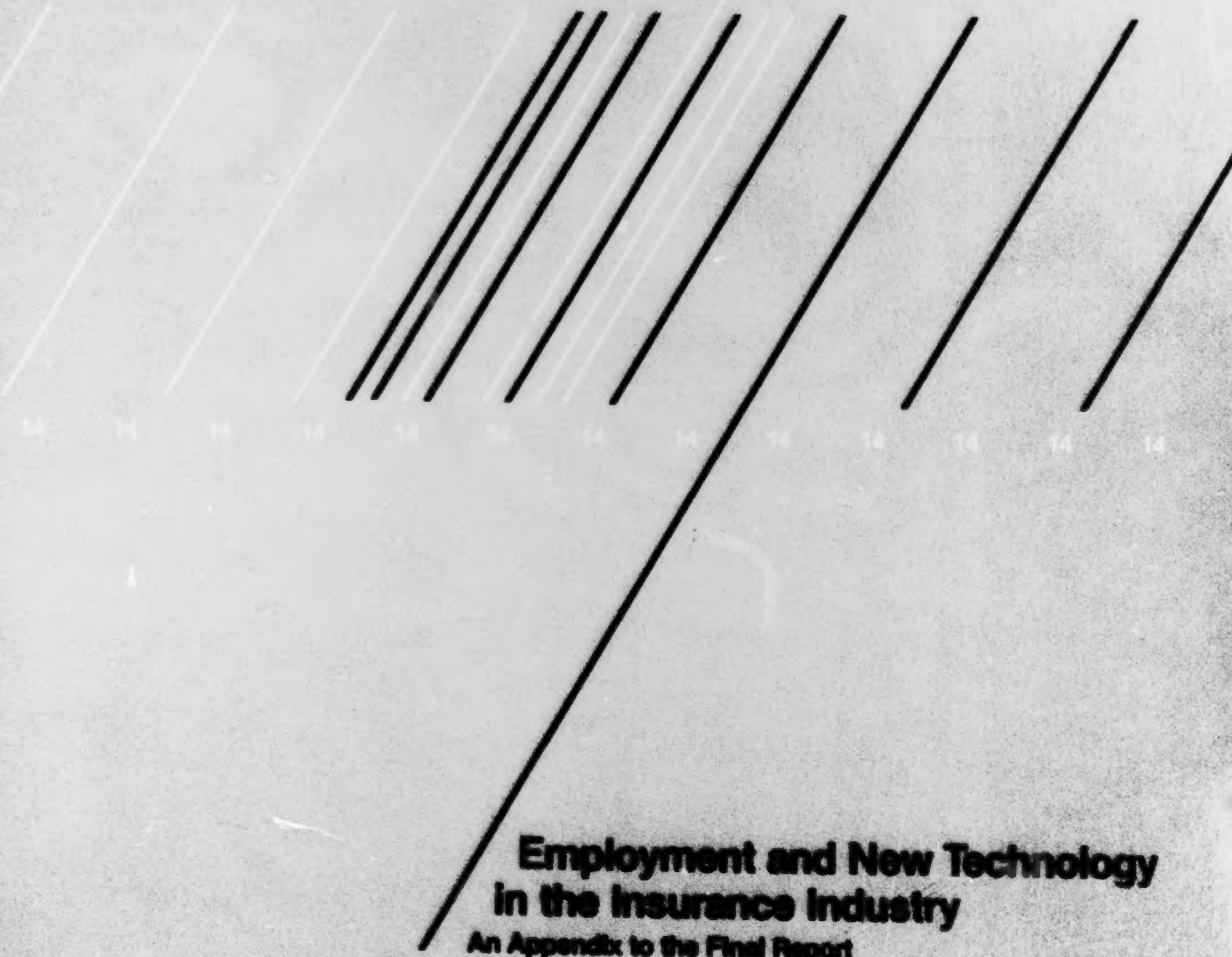
The Ontario
Task Force on
Employment and
New Technology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Employment and New Technology in the Insurance Industry

An Appendix to the Final Report

86-03661/

ONTARIO TASK FORCE ON EMPLOYMENT AND NEW TECHNOLOGY

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APPENDIX 14

EMPLOYMENT AND NEW TECHNOLOGY IN THE INSURANCE INDUSTRY

This Appendix contains a report prepared for the Ontario Task Force on Employment and New Technology. The topic was approved in advance by the Task Force. At the conclusion of the study, the Task Force had the opportunity to review the report, but its release does not necessarily imply endorsement of the results by the Task Force or its individual members.

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FOREWORD

The Ontario Task Force on Employment and New Technology, a joint labour-management group, was established in May, 1984, "to consider and report on the manpower and employment implications of new technologies as the same may be introduced and applied in Ontario during the next decade and the extent and nature thereof."

To inform its discussions, the Task Force established a research agenda designed to gather information on employment and technological change from a wide variety of sources. The research agenda contained projects which gathered information of a historical nature, and projects with a future orientation which were designed to gather information describing likely occupational and employment implications associated with technological change in the 1985-1995 period.

The Appendices to the Final Report of the Ontario Task Force on Employment and New Technology contain reports of these research projects. A complete list of these Appendices may be found at the end of this document.

Among the Appendices are reports of a series of studies to assess the extent and nature of the employment implications of new technology in selected industries in Ontario. Appendix 3 describes the process by which the industries were selected, and contains the studies' terms of reference which called for particular attention to selected new technologies and occupational groups. Appendices 4-18 contain reports of these industry studies, which were conducted by Currie, Coopers & Lybrand, management consultants.

This particular appendix contains a report of the study on the Insurance Industry.

Dr. Richard L. E. Brown, P.Eng.
Research Director

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The Board of Industrial Leadership and Development (BILD) of the Government of Ontario.

The Ontario Manpower Commission.

The Ontario Ministry of Labour.

The Task Force would like to thank the staff of Currie, Coopers & Lybrand, particularly Maureen Farrow and Victor Rocine, whose assistance in the conduct of this study is greatly appreciated.

Special thanks are due to all industry experts and survey respondents who provided information for this study.

EMPLOYMENT AND NEW TECHNOLOGY IN THE INSURANCE INDUSTRY

A Report Prepared by Currie, Coopers & Lybrand
for the Consideration of the Ontario Task Force
on Employment and New Technology

July 1985

Submitted By: Maureen Farrow
Judith Maxwell
Currie,Coopers
& Lybrand
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EMPLOYMENT AND NEW TECHNOLOGY IN THE INSURANCE INDUSTRY

PART I - INTRODUCTION AND METHODOLOGY

1.0 INTRODUCTION

This report is one of a series of industry reports which summarize the findings of a major research project[1] undertaken for the Ontario Task Force on Employment and New Technology. Each report includes a historical analysis and an outlook to 1995 for the industry, and a review of the anticipated impacts of new technology on employment.

1.1 Structure of This Report

This report presents the study findings for Ontario's Insurance Industry which is covered by the Standard Industrial Classification (SIC) 721[2], Insurance Carriers and SIC 735, Insurance and Real Estate Agencies. However, these SIC categories do not match the industry structure which can be classified into four different businesses. These have been grouped into three sections, on the basis of the competitive structure of the businesses and are described in this report under the following sections:

Section I 1. Life insurance and annuity (SIC 721).

Section II 2. Accident and Health insurance (SIC 721) and Property and Casualty insurance (SIC 721), also known as General insurance.

Section III 3. Insurance brokers and agents (part of SIC 735).

---

[1] Manpower and Employment Implications of New Technologies in Selected Industries in Ontario to 1995. The terms of reference of this assignment can be found in Appendix 3 to the Task Force's final report.

[2] 1970, Standard Industrial Classification (SIC), Statistics Canada.

Because the Statistics Canada classification fails to distinguish these four lines of business, the studies that follow rely heavily on industry and regulatory agency data. Statistics Canada data is used only to provide an overview on some aspects of the activities covered.

Each section includes four parts:

- The first part (Chapter 1.0) is the Introduction which includes a description of the approach and methodology.
- The second part (Chapter 2.0) is a Historical Analysis for the industry from 1971 to 1984 which provides background and a perspective on the industry's historical development.
- The third part (Chapters 3.0 to 7.0) discusses the results of the survey of firms in the industry and incorporates the interview findings with industry experts. These chapters cover:
  - a review of recent and anticipated technology adoptions,
  - the outlook for the industry to 1995, including expected output and employment levels,
  - effects on employment of new technology such as anticipated occupational shifts and changes in required skills,
  - a review of the labour relations environment as it relates to new technology, and
  - observations on planning efforts for technological change in the industry.
- Part four of the report includes various appendices that support the text of individual chapters.

1.2 Study Approach

The study approach selected incorporates the following research techniques:

- analysis of published statistics and reports on the industry, augmented by the working knowledge of industry specialists within Currie, Coopers & Lybrand,
- in-depth interviews with management and labour experts in the industry, conducted at various stages in the project, using structured interview guides, and
- an industry survey.

The reasons for the choice of these techniques are explained below.

1.2.1 Historical Analysis

The purpose of the historical analysis was to provide an informed perspective on the industry from which to view future trends. The historical analysis covers: the economic environment, competitive factors, output and employment patterns, productivity, technology adoption and the industrial relations environment. In order to permit cross industry analysis, consistent indicators and data sources were used.

1.2.2 Expert Interviews

At various stages in the project, a series of in-depth interviews were conducted with industry leaders, industry associations and union representatives. These experts have a broad understanding of the industry in terms of both its historical development and its future outlook.

Their input assisted in the preparation of the historical analysis and in the survey design, and facilitated a clearer interpretation of the survey results.

1.2.3 Sample Survey of Firms

The following describes the key features of the survey.

Ontario firms in the Insurance Industry were identified using various sources.[1] All firms with fifty or more employees were included in the sample frame. Employment in these firms is estimated to include 90 percent of the 31,200 employees (1983) in the Life Insurance Industry, 95 percent of the 20,000 employees (1983) in the General Insurance Industry and about 20 percent of the 36,715 employees (1981) in the Insurance Brokers and Agents Industry in Ontario.

A representative, random sample of firms, stratified by employment size categories (see Appendix A), was chosen from the sample frame. The senior executive officer of each firm was identified and a structured questionnaire was sent to this individual. A copy of the survey questionnaire is attached as Appendix B, together with an outline of the number of responses by question.

---

[1] The source for life insurance companies and premium data (1981) was the Annual Report of the Superintendent of Insurance for Ontario, 1982, Ontario Ministry of Consumer and Commercial Relations. Ontario based firms were established through the directory listing in the May, 1984, statistical issue of the Canadian Underwriter.
The source for general insurance companies was the Canadian Underwriter, May 1984. These data excluded accident, sickness and reassurance premium income.
The Directory of the Registered Insurance Brokers of Ontario (RIBO) supplied a distribution of firms by employment size for insurance agents and brokers but was unable to provide information on firms by size. This latter information was taken from the 1984 Dun & Bradstreet file.

Consultants provided ongoing assistance to respondents, both on the telephone and in person, to complete the questionnaires. The questionnaire survey process generally ended with a personal interview. The number of firms who participated in the sample survey are shown in Table 1.

In most cases, several participants in each organization contributed to the completion of a questionnaire. In the Life Insurance Industry survey, an average of 2.2 participants contributed per questionnaire and the companies' principal participants had an average of 18 years' experience with their firms and 22 years in the industry. In the General Insurance Industry Survey, an average of 1.9 participants contributed to a firm questionnaire and the companies' principal participants had an average of 24 years' experience with their firms and 27 years in the industry. In the Insurance Brokers and Agents survey, an average of 1.4 participants contributed to a firm questionnaire. The companies' principal participants had an average of 15 years' experience with their firms and 19 years in the industry.

TABLE 1

INSURANCE INDUSTRY

Number of Firms Responding by Firm Employment Size

Firms by Employment Size	LIFE INSURANCE		GENERAL INSURANCE		INSURANCE AGENTS AND BROKERS	
	Firms	Firms in Sample Frame	Firms	Firms in Sample Frame	Firms	Firms in Sample Frame
Small (50-199)	1	7	4	27	6	39
Medium (200-999)	1	5	4	22	2	6
Large (1,000+)	4	14	0	2	0	0
Total	6	26	8	51	8	45

The sample survey results have been weighted up to the number of firms in the sample frame. That is, the survey results reported herein refer to the weighted survey results and are, therefore, representative of firms with annual premium income of more than $10 million in both Life and General Insurance and representative of firms with 50 or more employees in Insurance Brokers and Agents in Ontario. Reliability of the sample is estimated at 95 percent, with a 5 percent allowable error, for Life Insurance, 95 percent with a 9 percent allowable error for General Insurance and 90 percent with an 11 percent allowable error for Insurance Brokers and Agents. (See Appendix C for an explanation of the sample reliability calculation method.)

Readers should be cautioned about the nature and reliability of the sample survey results. The questionnaire included a set of questions asking respondents about the future (i.e., five and ten years ahead) from a particular point in time. The results are, therefore, a representative sample of views about, and expectations for, the future and should not be viewed as what will necessarily take place. The survey provides a useful perspective from which to better understand how the industry perceives the future of new technology adoption and its anticipated impacts on employment.

SECTION I - LIFE INSURANCE

PART II - HISTORICAL TRENDS 1971-1984

2.0 INTRODUCTION

There were 127 life insurance companies operating in Ontario in 1981. They received $3.4 billion in direct premium income, about 41 percent of the total income for Canada of these same firms. The eleven largest firms noted in Table D.1 account for almost 70 percent of the life insurance business sold in Ontario or approximately 62 percent of the activity in Canada. Most of these companies also have extensive foreign operations, mainly in the United States,[1] and several of them are controlled by foreign parent companies in the same business (for example, Metropolitan Life and Prudential of England). However, a number of these firms are mutual companies which means that ownership is vested in the policy holders.

Life insurance companies in Ontario employed 31,200 people in 1983. Ontario employment is larger than would be required by the volume of business in the province because so many firms have their national head offices in Ontario.

The Life Insurance Industry's main product line prior to the 1950's was whole life insurance, a policy typically purchased by people in young or middle years. Through regular payments, it built up an asset base which would provide income to the beneficiaries of the insuree. During the 1960's period, the industry began to offer group insurance (to groups of employees, at a lower cost than individual policies, because the risk was shared) and term insurance (where the policy expires at the end of, say, five years, and there is no opportunity to build up a savings base).

---

[1] In 1983, Canadian companies sold $6 billion in life insurance premiums in Canada and $3.4 billion in other countries. Canadian Life and Health Insurance Association "Questions and Answers on the Future Role of Financial Institutions in Ontario" (Mimeo, September 19, 1984).

Despite the addition of these new types of life insurance, the industry in Canada is mature, for two reasons:

- Life insurance has long been a preferred savings vehicle for the Canadian public. At one time, Canadians carried more insurance per capita than any other nation. In recent years, they have been surpassed by the United States and Japan.

- With such heavy penetration of the market, growth in life insurance has been limited by the increase in the population and in living standards. The slower rate of population growth in Canada means that the potential number of buyers is growing more slowly. In addition, the slower growth in incomes since the mid 1970's has restrained the rise in the amount of insurance people wish to buy in order to preserve the living standards of their beneficiaries.

The limited scope for growth in traditional lines of insurance has encouraged the industry to diversify its product line into other savings vehicles. The principal alternative product line is the sale of annuities. The individual deposits funds (either through regular contributions or a lump sum deposit) with the company, and the company guarantees a specific annual income for a specific term or for life. In 1981, annuity revenues accounted for 61 percent of total direct premium income received by the industry in Ontario, up from 31 percent in 1971. Also, during the 1970's, life insurers began to offer investment vehicles designed to meet the needs of individuals saving for their retirement. However, looking back on that period now, a number of industry spokesmen state that the industry has been slow to keep pace with the rapid changes in financial markets.[1] This is partly a function of the conservative traditions of the industry and careful regulation of its investment options. The nature of its business has been to offer long term financial security for the individual. Success was determined by accurate assessment of actuarial risks, careful selection of the insuree, and conservative management of cash flow aimed at the long term protection of capital.

---

[1] "Overcapacity seen at root of life insurers' problems", Globe & Mail, November 14, 1984.

The industry invests heavily in bonds and its exposure to equities and short term money market securities is carefully regulated by the federal and provincial Superintendents of Insurance. The whole culture of the industry rests on caution and avoidance of excessive risk. Marketing systems are also low keyed. Most life insurance is sold through direct sales by agents who are tied in varying degrees to the insuring company.

Until the late 1960's, the Life Insurance Industry also sold health insurance, but the introduction of national hospital insurance in 1958, followed later by medicare, eliminated much of the need for this kind of insurance. The life companies still sell about $891,000 in health and accident insurance premiums in Ontario but this side of the business - quite different from life insurance - is discussed in Section II on General Insurance.

2.1 The Market Environment

The Life Insurance Industry's conservative traditions have been seriously shaken over the past decade by the appearance of strong competition from other financial institutions for a share of the savers' dollar and dramatic changes in the way financial markets function. The key elements in this change in the market environment have been:

1. Maturing of the market for life insurance per se, which forced the industry to offer other savings vehicles.

2. Changing needs and preferences of the individual. The inflation experience of the 1970's made Canadians much more aggressive in demanding high rates of return on their savings and encouraged them to choose shorter term and more

flexible savings vehicles than those offered by life insurers. Many Canadians also decided they had the time and skills to manage their own portfolio and therefore turned less of their savings over to the life insurance industry.

3. The impact of technology on internal operations and on the financial markets generally. The internal functions of the life insurer have been altered by computerization of actuarial estimates and of insurance policy information, and by the introduction of electronic communication of data within the company. This has enabled the companies to increase their capacity to administer and distribute insurance products and to create the scope for introducing new products. At the same time, the introduction of electronic funds transfer and the computerization of the operations of other financial institutions has unleashed similar forces in the banks and trust companies. Finally, because Canadian financial institutions and markets have close ties with those in the United States, there has been a spillover of technological developments from south of the border. All of these changes have put financial markets in a state of turmoil for two reasons:

    - The technological change enhances the capacity of each company and each industry to provide financial services.

    - Technological change also blurs the distinctions between institutional roles and between financial products.

    The net effect is a significant increase in competition for a share of the individual's savings dollar, and major strains on the regulatory framework intended to monitor the activities of financial institutions (see the next section).

2.1.1 The New Competition

Life insurers face more competition not only from banks, trust companies and credit unions, but even from the federal government. Banks and trust companies now offer such products as term deposits with high yields, daily interest on ordinary deposits, and registered retirement savings plans (RRSPs). The mutual fund industry offers opportunities for high yields and a more "go-go" image. The federal government has captured a growing share of personal savings through Canada Savings Bonds and Treasury Bills that are specifically packaged to offer the individual saver high yields and good security.

This competition is documented in Table D.2, which shows the share of personal savings of each of the major institutions. The life insurance share has dropped from 13.7 percent in 1976 to 11.9 percent in 1983. At the same time, the Life Insurance Industry's share of the Canadian assets of major savings type institutions in Canada has dropped from 21.4 percent in 1971 to 14.5 percent in 1983.[1] The volume of business of life insurers has grown substantially since 1971, but other financial institutions have grown even faster because as competition for savings increased, the Life Insurance Industry faced two disadvantages: Its retail interface with the consumer depends on personal agents rather than the branch outlets of other constitutions; and its culture emphasized long term security rather than short term performance.

2.1.2 The Regulatory Framework

The regulatory framework for financial markets in Canada has been based on the principle of segregation of institutions into the four main "pillars" - banks, trust companies, life insurers and investment dealers. Each one conducts operations involving different notions of risk, pricing and leverage. The regulations are intended to ensure that the firms are solvent, and thus to defend the integrity of the financial system. Over time, the strict regulation of markets has been softened by legislative changes intended to encourage competition and thus to give the customer a better deal - more service at a lower cost. Trust companies were allowed to get into retail deposit-taking in competition with the banks, and life insurers were permitted to set up segregated funds to compete with performance-oriented savings vehicles.

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[1]. Canada Review, various tables.

The other major change in regulation has been to allow companies to set up holding companies which create a vehicle for cross-ownership of institutions. The ownership of banks is still strictly limited, although the federal government has proposed changes in legislation that would enable financial holding companies to enter the banking industry. Life insurers, for example, can form ancillary companies that can buy a trust or general insurance company, even though the life insurance company itself is not permitted to provide trust or general insurance services. Table D.3 provides some examples of how some of the largest and most aggressive financial institutions have begun to build interlocking corporate ties that connect the four pillars. By maintaining separate companies in each "pillar", regulation can continue in the old way, but the cross-ownership creates the potential for convergence of the product line.

The concept that lies behind this convergence is the "financial supermarket" - one stop shopping for the individual who may need advice on insurance, pensions, tax planning and short term investment strategies. Obviously, some very large companies are positioning themselves to provide these comprehensive services. But there are many observers who question the viability of the concept for very practical reasons.

- It is difficult to train a sales force to handle the complex array of saving and investment choices now open to the public. This complexity demands a certain amount of specialization.

- There are inherent contradictions in the preferred market for certain types of savings vehicles. The ideal candidate for life insurance - a young person with few financial responsibilities - is considered to be the highest risk candidate for automobile insurance, to take only one example.

Nevertheless, the Life Insurance Industry is being swept along by the popularity of the financial supermarket concept and is under strong pressure to shed its conservative traditions and enrich the range and flexibility of products it offers to the public.

2.2 Industry Trends

Tables D.4 to D.7 present key industry indicators for the years 1971 to 1981.

2.2.1 Aggregate Output

The output indicators available for the insurance industry are not satisfactory. The main problem is that neither Statistics Canada nor the industry associations have been able to construct a price index for this sector. Statistics Canada does provide an implicit price deflator for insurance carriers in its gross domestic product series, but this deflator is a residual which follows an erratic pattern for the period 1971 to 1983. Statistics Canada measures current dollar output in the industry as a weighted average of premiums written and insurance under administration. It then uses a formula based on the average cost of performing each type of business (life insurance, annuities, property and casualty insurance) in 1971. This formula is based on average costs in 1971 but has not been updated to reflect changes in the cost of doing business, even though costs in this sector have probably declined over the period 1971 to 1983, and some types of general insurance have been subject to intense price competition. The implicit price deflator rose at an annual average rate of 6.7 percent per year between 1971 and 1978, but then fell sharply from 1979 to 1982. The average increase from 1971 to 1983 was 1.5 percent per year.[1] The swings in this deflator are in tune with the cycles in the industry, but the dramatic movements from year to year are difficult to explain.

A second problem with the Statistics Canada data is that it aggregates the life and general insurance business into one measure of output for insurance carriers. To get around both these problems, we will be presenting industry data from industry sources in current dollars only. We therefore begin this section with a word of caution about the quality of the data. Table D.4 provides indicators in current dollars for specific lines of business of the Life Insurance Industry (excluding accident and health insurance). The information is available only until 1981.

Life insurance premiums written in Ontario in 1981 amounted to $1.3 billion in 1981. They increased at an average annual rate of 7.9 percent between 1971 and 1981. Activity increased in every year of the decade with the strongest gains occurring in 1975 and 1976.

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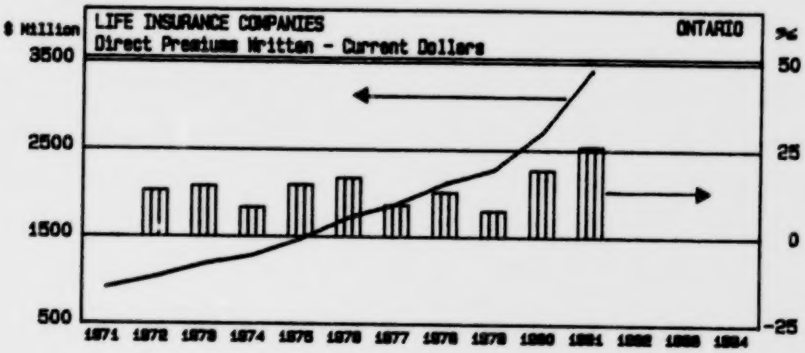
[1] The only other measure of prices is the consumer price index for home owners' insurance premiums. This index rose at an average rate of 14.6 percent per year from 1971 to 1983.

Sales of annuities (direct considerations) amounted to $2.1 billion in 1981. They increased by 22 percent per year from 1971 to 1981. The strongest gains occurred in 1975 and 1976 and in 1980 and 1981.

This pattern was disrupted after 1981 by a change in the tax system that eliminated tax advantages for certain types of annuities. Since 1982, annuity activity has picked up again, although growth has been sluggish because of competition from other types of retirement saving, especially RRSP's.

EXHIBIT 1



Total direct premiums for life insurance and annuities combined amounted to $3.4 billion in 1981. They increased at an annual average rate of 14.1 percent over the period 1971 to 1981.

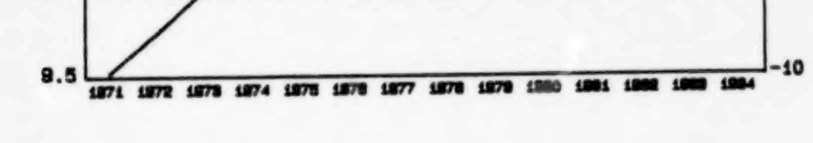
The lack of an adequate deflator makes it difficult to assess the underlying trends in industry activity. Some further insights are revealed by the data presented in the next sub-section.

2.2.2 Competitive Position

There are two ways of examining the Life Insurance Industry's competitive position. One is output per worker, and the other is share of the personal savings dollar.

Output per worker in Table D.5 is calculated from Statistics Canada's gross domestic product in constant dollars and employment data from the Employment Earnings and Hours Survey. The data are for Canada and for insurance carriers (which includes both life and general insurance). This series may actually understate the efficiency gains in the insurance sector because the method of calculation does not take into account the changes in unit cost since 1971. Table D.5 shows that output per worker increased dramatically over the period 1971 to 1983, but that the big gains occurred in two waves - first in 1972-1973 and then in 1981 (see Exhibit 2).

EXHIBIT 2



Employment in life and general insurance combined actually declined in 1972 and 1973, in 1980 and in 1983 and 1984.

Interviews with industry experts suggest that these sharp increases in value added per worker correspond with the periods when the industry was adapting to new technologies. Annual reports of the Superintendent of Insurance for Ontario indicate that employment in life insurance in Ontario declined in 1972, in 1977 and 1978 and again in 1983, suggesting that the timing of life insurance adjustment to technologies was different from that of the life and general industries combined.

The second measure of competitive position is the share of the personal savings dollar, defined in its broadest sense and presented in Table D.2. This is a measure of the life insurance industry's performance vis-a-vis that of other financial institutions. Total personal savings in Canada in 1983 amounted to $375 billion, up from $150 billion in 1976, the first year that Statistics Canada collected the data in this format. Total savings increased at an average annual rate of 14 percent from 1976 to 1983, but the Life Insurance Industry's savings under administration increased by 11.7 percent. Accordingly, life insurers' share of total savings dropped by almost two percentage points from 13.7 percent in 1976 to 11.7 percent in 1982 and then made a modest recovery to 11.9 percent in 1983.

2.2.3 Capital Investment

The insurance industry is not heavily committed to fixed assets so capital spending is low in relation to the total asset base.[1] Construction is mainly devoted to providing office space for employees while machinery and equipment is primarily office equipment, including computer and communication systems. Over time, the mix between construction and equipment is shifting, as the recent declines in total employment have reduced the need for office space, while changes in technology have increased the need to add or replace office equipment.

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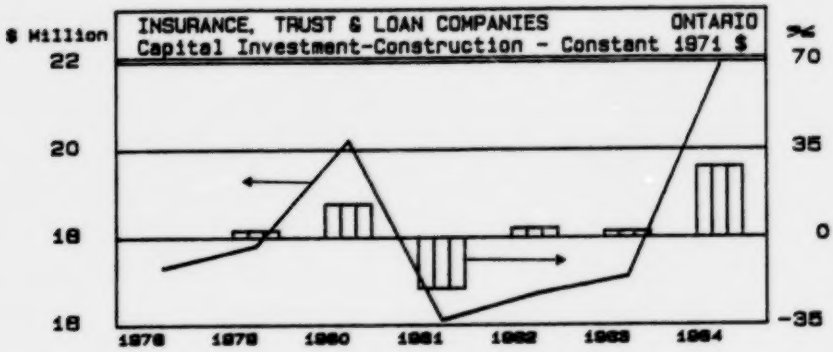
[1] The data reported here exclude real estate developers.

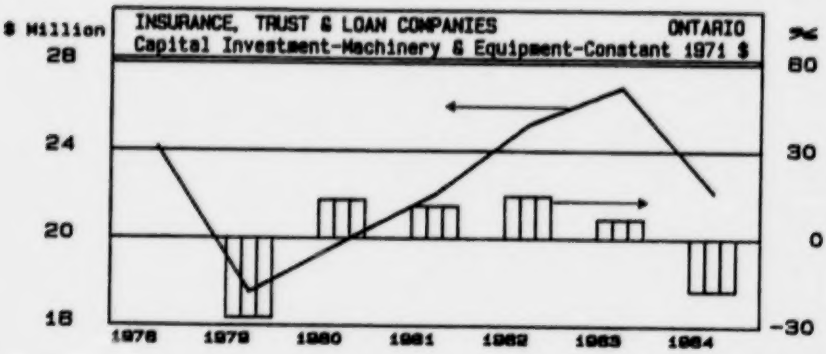
The data for investment is available only for insurance, trust and loan companies in Canada and Ontario. Total capital expenditures planned for 1984 in Ontario were $127 million in current dollars. This total was divided evenly between construction and machinery and equipment spending (Table D.6), and it accounted for 65 percent of total spending planned for Canada in 1984.

EXHIBIT 3



In constant dollar terms (Table D.7), capital outlays in Ontario (available only since 1978) have fluctuated between a low of $35 million in 1979 and a high of $44 million in 1983 and 1984. The drop in 1979 was caused by a decline in machinery and equipment outlays, while the decline in 1981 was caused by a drop in construction activity.

EXHIBIT 4



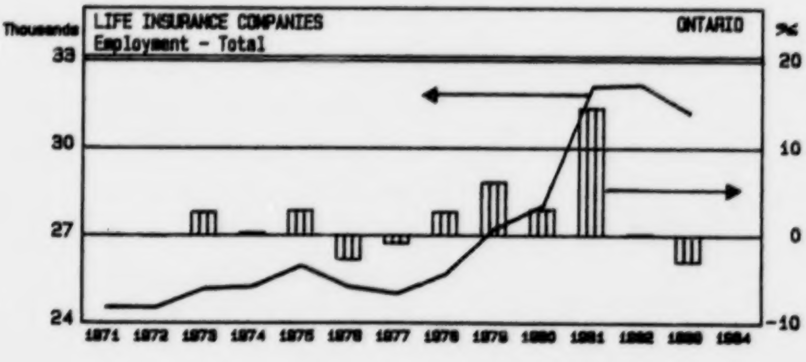
The longer term trends are only available for Canada. Construction outlays peaked in 1978 (in constant dollars) and have declined since to the levels typical of the first half of the 1970's. Machinery and equipment spending was especially strong from 1976 to 1979. It slumped from 1980 to 1982, but then rose to a new peak in 1983. The volume of spending in Ontario since 1978 has been much more stable than that for Canada.

2.2.4 Employment

The discussion of employment includes an analysis of aggregate trends and occupational changes.

- Aggregate Trends

EXHIBIT 5



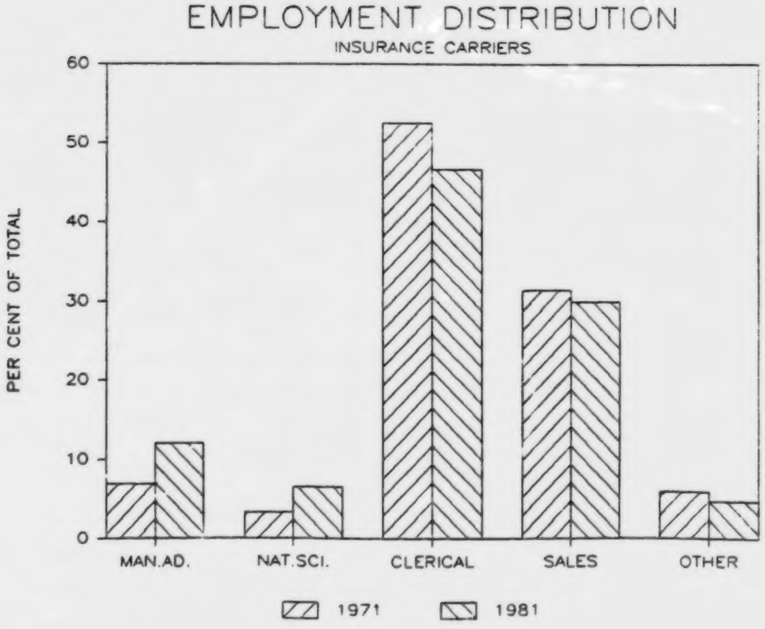
Total employment for Canada in SIC 721, insurance carriers (life and general insurance) declined in 1983 and 1984 to 92,000 people, down from a peak of 99,000 in 1982 (see Table D.5). Employment increased at an average annual rate of 1.1 percent from 1971 to 1984. The rate of increase from 1971 to 1981 was somewhat stronger - 1.6 percent per year.

Employment declined in 1972 and 1973, gained in the middle part of the decade, and then in 1977 and 1978, it grew by well over 8 percent per year. Then the rate of increase flattened in 1979 and employment declined in 1980. The declines in the early part of the 1970's were associated with a cutback in operations by some firms in general insurance and the introduction of new technologies. The declines in 1983 and 1984 were also associated with technological change and with the failure of five small general insurance companies.

Employment in the life insurance sector in Ontario grew more quickly than the series for insurance carriers in Canada. It also followed a more stable growth track. This is probably due to the high proportion of head offices located in Ontario and the fact that some companies (such as Sun Life, the largest in Canada) have moved their head offices from Quebec to Ontario since 1971. Total employment in Ontario increased from 24,520 in 1971 to 31,200 in 1983, an average annual gain of 2 percent (Table D.4). Employment actually dropped in 1972, rose slowly from 1973 to 1975, then dropped again in 1976 and 1977. It rose quickly from 1978 to 1981, but there was little change in 1982 and a sharp 3 percent decline in 1983.

- Occupational Changes

EXHIBIT 6



Census data for Ontario presented in Table D.8 show that total employment for the life and general insurance industries increased at an average annual rate of 3.2 percent over the 1971 to 1981 period. Positions in the Clerical occupations increased by 2.0 percent, the lowest average annual rate of the four major categories. The highest average annual rate of increase was in the Natural Sciences, Engineering and Mathematics group. The proportion of both Clerical and Sales workers decreased in the 1971 to 1981 period, from 52 to 47 percent and 31 to 30 percent of total employment in SIC 721, respectively. The Other category, accounting for less than 5 percent of total employment in 1981, was made up of a variety of occupations including artists and service-related positions.

Analysis at the more detailed occupational level in Table D.8 indicates that financial managers and systems analysts were the two occupations which showed the strongest growth from 1971 to 1981. Both groups experienced average annual rates of growth in numbers employed of over 10 percent during the decade. Meanwhile, the number of clerical and other supervisors, and typists and clerk-typists declined between 1971 and 1981.

The analysis by female representation shown in Table D.9 indicates a considerable increase from 53.1 to 61.4 percent in the proportion of females working in the insurance industry between 1971 and 1981. The major occupations contributing to this growth were insurance salespersons and agents and insurance and finance clerks. Declines in the number of jobs for females occurred in the typist and clerk-typist and other clerical and related supervisor occupations.

PART III - FUTURE TRENDS: THE SURVEY RESULTS

Part III of this study presents the survey results which discuss the firms' surveyed opinions as to future trends in technological adoption and employment impacts.

3.0 ADOPTION OF NEW TECHNOLOGY

This chapter reviews the expected trends in the adoption of new technologies in the Life Insurance Industry and the factors driving the need for and affecting the rate of technology adoption.

3.1 New Technologies and Rates of Adoption

The Life Insurance Industry has undergone two pronounced waves of technological change; the first was in the early 1970's and the second was in the early 1980's. The earliest reported use of a computer in the industry was in 1956 at Manufacturers' Life, and this was actually one of the earliest uses of computers in the industry in Canada.[1] By 1960, 11 computers were in use in seven Canadian companies. By 1969, 12 percent of the insurance industry (both life and general insurance) had adopted computers, although life companies were well ahead of general insurers at that time. About half of the computer applications were in bookkeeping activities - accounts receivable and payable, customer billing and payroll functions. By 1965, the computers were also doing large volume record keeping and were being used for management control and policy development work. Some early network systems were also put in place in the mid 1960's, where data transmission was used to transmit inquiries about policy status, requests for payment of claims from field to head office payment centres, and premium payment information used to update home office policy records. By that time, computers were in extensive use across the industry. The implications of the applications of computers were as follows:

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[1] The information on the penetration of computers is extracted from Steven Globerman, The Adoption of Computer Technology by Insurance Companies (Economic Council of Canada, 1984). The most recent data cited in the study are for 1977.

- A sharp increase in the capacity of the firm to manage paper work. Processing costs were reduced and, over time, the number of employees in clerical functions was scaled back, although there was a long lag between the introduction of computer systems and the drop in employment. The increase in capacity led to more intense competition for life insurance sales.

- Facilitation of centralization of clerical functions at the head office, with regions and agents offices linking into the central data processing system.

But Steven Globerman argues that there was no clear advantage to very large companies. Computers created major efficiency gains for medium sized and large companies, but, for firms with over $500 million in premium income, unit data processing costs started to rise.[1] Small companies were at a disadvantage because there was a long lag before the computer systems were scaled down to a size that suited their operations.

The second wave of technological change has been the dramatic increase in the availability and efficiency of data communications systems. The earliest "realtime" networks were put in place in 1973 and 1974, according to Globerman, but their big impact on the industry appears to have taken place since 1980. These communication systems have augmented efficiency by reducing data processing costs and have also promoted centralization of the firm's activities in head office.

A third wave, which is just beginning in the United States and will soon have an impact on Canada, is the integrated work station which links computer, communications and office automation systems. Experiments in the United States have created successful integrated work stations for four different functions: clerical, sales, professional and management.[1]

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[1] Ibid, p. 23

The driving force behind the adoption of the technologies in the past has been the desire to reduce operating costs. Much of the cost saving has been passed along to the customer as a result of price competition among insurance companies.

In the 1980's and the 1990's, the pressure to adopt new technologies will also include the desire to make use of them in order to generate new products or to achieve qualitative improvements in services offered in the marketplace in order to compete with other financial institutions for a share of the personal savings dollar.

The pace of technological change will continue strongly through the early 1990's for all the technologies. Table 2 summarizes the percentage of firms who have adopted new technologies before 1985, or will by 1990, or will after 1990 and before 1995. The following provides observations on the survey findings.

In general, the large companies adopt new technologies ahead of their small and medium sized competitors. But all of the firms in the industry are advanced in the use of office automation technologies.

3.1.1 Customer Sales and Service Technologies

Life insurance companies are already making widespread use of on-line policy/client data bases and electronic claims processing systems. By 1990, many firms expect to adopt computerized insurance needs analysis and brokerage management systems. On-line terminals for group insurance companies are planned for adoption by almost all companies. A good portion of the large firms and all of

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[1] Bruce J. Goodman, "Integrating Information Systems and Office Automation," Best's Review, March, 1984, p. 92.

Results of
Question 3

TABLE 2: LIFE INSURANCE

SIC 721

Percent of Firms Planning to Adopt New Technologies by Employment Size (1)

Technologies	Before 1985				1985-1990				1990-1995			
	Small	Medium	Large	Total	Small	Medium	Large	Total	Small	Medium	Large	Total
CUSTOMER SALES AND SERVICE TECHNOLOGIES												
On-Line Policy/Client Data Bases	100	100	100	100	-	-	25	21	-	-	-	-
Computerized Insurance Needs Analysis	0	100	50	49	100	-	50	52	-	-	-	-
Computerized Contract Generation	0	100	75	69	100	-	25	31	-	-	-	-
Electronic Claims Processing Systems	0	100	100	90	-	-	-	-	-	-	-	-
Automatic Insurance Verification	0	0	75	62	-	-	-	-	-	100	-	7
Computerized Rating/Underwriting	0	0	25	21	100	-	75	72	-	-	-	-
Brokerage Management Systems	0	0	25	21	100	-	50	52	-	100	-	7
On-Line Terminal for Group Insurance Customers	0	0	0	0	-	100	100	90	-	-	-	-
Other	0	0	25	21	-	-	25	21	-	-	-	
OFFICE OR OFFICE AUTOMATION TECHNOLOGIES												
Word Processing	100	100	100	100	-	-	-	-	-	-	-	-
Electronic Filing	0	0	50	41	100	100	50	59	-	-	-	-
Microcomputers/Personal Computers	100	100	100	100	-	-	-	-	-	-	-	-
Internal Data Base Management Systems	0	0	75	62	100	100	25	38	-	-	-	-
Local Area Networks (LANs)	100	100	25	38	-	-	50	41	-	-	25	21
4th Generation Computer Languages	0	0	100	82	100	100	25	38	-	-	-	-
Computerized Decision Support Systems	100	0	50	52	-	-	75	62	-	100	-	7
Voice Activated Computers	0	0	0	0	100	-	25	31	-	-	75	62
Artificial Intelligence/Expert Systems	0	0	25	21	-	-	25	21	-	-	50	41
Integrated Work Stations	0	0	50	41	100	100	50	59	-	-	-	-
TELECOMMUNICATIONS TECHNOLOGIES												
Private Automatic Branch Exchange (PABX)	100	100	50	59	-	-	50	41	-	-	-	-
Electronic Mail	100	0	50	52	-	100	50	49	-	-	-	-
Voice Mail	0	0	0	0	100	-	50	52	-	-	50	41
Facsimile with Built-In Microprocessor (FAX)	0	0	25	21	-	-	50	41	-	100	25	28
Satellite/Microwave Systems	0	0	0	0	-	-	-	-	-	-	100	82
Video Conferencing	0	0	0	0	100	100	25	38	-	-	75	62
Fibre Optics	0	0	0	0	-	-	50	41	-	-	50	41
Other	0	0	25	21	-	-	-	-	-	-	-	-

(1) '0' used prior to 1985 to indicate have not adopted. '-' used for period 1985-1990 and 1990-1995 to indicate respondents, at the time of survey, are not planning to adopt this technology or 'don't know'. Responses are not mutually exclusive.

the medium sized firms now use computerized contract generation and the small firms expect to follow by 1990.

3.1.2 Office Automation Technologies

Word processing and micro computers are already extensively used in the industry. Internal base management systems are planned for adoption by all the companies of all sizes, over the next five years. Large firms have taken the lead in adopting 4th generation computer languages. However, both the small and medium firms expect to acquire these systems before 1990. Electronic filing, local area networks, integrated work stations and computerized decision support systems will all be widely used by 1990. Voice activated computers and artificial intelligence will be in extensive use in the industry by 1995.

3.1.3 Telecommunications Technologies

The small and medium sized firms have already invested in private automatic branch exchange and the large firms expect to catch up by 1990. Electronic mail is anticipated to be used by companies of all sizes, by 1990. FAX systems are not extensively used, and further adoption plans are spread over the next ten years. Voice mail, satellite/microwave systems, video conferencing and fibre optics are not presently used, and firms vary in their plans for adoption by 1995.

3.2 Forces Driving the Need to Adopt New Technology

A few key forces are driving the industry to adopt new technologies. Table 3 summarizes the results of the survey. The most important factors are:

Results of
Question 4

TABLE 3: LIFE INSURANCE

SIC 721

Most Important Factors Driving the Need to Adopt New Technologies

Factor		Small (50-199)	Medium (200-999)	Large (1000+)	Total Firms
		Percent of Firms by Employment Size			
COMPETITIVE PRESSURES	First	0	100	50	49
	Second	0	0	0	0
	Third	0	0	25	21
	Weighted Importance (1)	0.0	3.0	1.8	1.7
STRATEGIC	First	0	0	0	0
	Second	0	0	0	0
	Third	0	0	25	21
	Weighted Importance	0.0	0.0	0.3	0.2
CUSTOMER DEMANDS FOR CHANGES	First	100	0	0	10
	Second	0	0	50	41
	Third	0	0	0	0
	Weighted Importance	3.0	0.0	1.0	1.1
INCREASE QUALITY	First	0	0	0	0
	Second	0	0	0	0
	Third	0	100	25	28
	Weighted Importance	0.0	1.0	0.3	0.3
INCREASE PRODUCTIVITY	First	0	0	0	0
	Second	100	100	25	38
	Third	0	0	25	21
	Weighted Importance	2.0	2.0	0.8	1.0
LOWER COSTS	First	0	0	25	21
	Second	0	0	0	0
	Third	0	0	0	0
	Weighted Importance	0.0	0.0	0.8	0.6
ENTER NEW MARKETS/ GROWTH	First	0	0	25	21
	Second	0	0	25	21
	Third	0	0	0	0
	Weighted Importance	0.0	0.0	1.3	1.0

(1) Weighted Importance = (First % x 3) + (Second % x 2) + (Third % x 1)

Results of
Question 5

TABLE 4: LIFE INSURANCE

SIC 721

Most Important Factors that Could Slow the Rate of New Technology Adoption

Factor		Percent of Firms by Employment Size			
		Small (50-199)	Medium (200-999)	Large (1000+)	Total Firms
ABILITY TO FINANCE	First	0	0	0	0
	Second	0	100	25	28
	Third (1)	0	0	0	0
	Weighted Importance	0.0	2.0	0.5	0.6
COST OF NEW TECHNOLOGY	First	100	100	50	59
	Second	0	0	0	0
	Third	0	0	0	0
	Weighted Importance	3.0	3.0	1.5	1.8
COMPETITIVE ENVIRONMENT	First	0	0	0	0
	Second	0	0	0	0
	Third	0	0	25	21
	Weighted Importance	0.0	0.0	0.3	0.2
LACK OF SKILLS AND/OR KNOW-HOW TO IMPLEMENT	First	0	0	0	0
	Second	100	0	50	52
	Third	0	0	0	0
	Weighted Importance	2.0	0.0	1.0	1.0
UNWILLINGNESS TO CHANGE	First	0	0	25	21
	Second	0	0	0	0
	Third	0	100	0	7
	Weighted Importance	0.0	1.0	0.8	0.7
ALL OTHERS	First	0	0	25	21
	Second	0	0	0	0
	Third	0	0	0	0
	Weighted Importance	0.0	0.0	0.8	0.6

(1) Weighted Importance = (First % x 3) + (Second % x 2) + (Third % x 1)

- Competitive pressures. These pressures include the excess capacity in the Life Insurance Industry and the slow growing domestic market. This factor was ranked first by both large and medium sized companies. It was not mentioned by small companies.

- Customer demands for changes. This was ranked first by all the small companies.

- Increase productivity. The industry recognized the need to gain greater control over the paper flow. This was ranked second or third by all the respondents to the survey.

3.3 Factors that Could Slow the Rate of Technology Adoption

The survey participants identified the single most important factor that could slow the rate of technology adoption as the cost of new technology. This was ranked first by all sizes of firm.

The second most commonly cited factor that could slow adoption of technology is the lack of skills and/or know-how to implement. This reflects the difficulty insurance companies face in retraining staff with long service to use the new technologies. Both small and large firms ranked this second, while medium sized firms gave third ranking to a related problem - unwillingness to change. Table 4, summarizes the results of the survey.

4.0 INDUSTRY OUTLOOK TO 1995

This chapter reviews the anticipated outlook for the Life Insurance Industry in terms of aggregate output (i.e., premiums written in Ontario), investment plans, aggregate employment and changes in occupational structure to 1995.

4.1 Output to 1995

Life insurance premiums written increased by 7.5 percent in 1983 in current dollars and by 9 percent in 1984. This compares with an average annual increase of 7.9 percent from 1971 to 1981. In 1985, the respondents are expecting another year of 9 percent growth. In the longer term the industry expects premiums to rise by about 8.5 percent per annum to 1995. The survey results are summarized in Table 5. Respondents were asked to estimate current dollar growth because of the difficulty of measuring inflation in this industry.

4.2 Investment Patterns

The firm respondents indicate that the level of investment in the industry is expected to be about $17.6 million during the period 1985 to 1990. Of that amount, 94 percent will take the form of machinery and equipment investment. About 66 percent of plant and equipment investment expenditure will be related to new technology. The survey shows expected investment levels for the 1990-1995 period to be $25.8 million. About 78 percent will be in machinery and equipment and again 66 percent of that investment will be related to new technology.

4.2.1 Justifying Financial Investment in New Technology

As with other investment, new technology investment is subjected to formal tests of profitability. The industry appears to require a return on investment of about

Results of Question 1

TABLE 5: LIFE INSURANCE

SIC 721

Premiums Written in Ontario

Firms by Employment Size	Average Annual Compound Rate of Change (in Current Dollars) (1) Estimated 1982-1983	 Estimated 1983-1984	 Estimated 1984-1985	 Expected 1985-1990	 Expected 1990-1995
Small (50-199)	-2.0	2.0	2.0	3.5	4.0
Medium (200-999)	7.0	9.0	8.0	8.0	8.0
Large (1000+)	9.0	10.5	10.5	9.5	9.5
Total Firms	7.5	9.0	9.0	8.5	8.5

(1) Rounded to closest 0.5%

Results of
Question 17e

TABLE 6: LIFE INSURANCE

SIC 721

Justifying Financial Investment in New Technology

Firms by Employment Size	Pay-Back Period		Return on Investment	
	% of Firms Using Pay-Back	Average Period	% of Firms Using ROI	Average Rate
		(Years)		(%)
Small (50-199)	100	3	0	18
Medium (200-999)	100	2	100	15
Large (1000+)	50	0	100	0
Total Firms	65	3	83	16

Answers not mutually exclusive.

Results of
Question 17f

TABLE 7: LIFE INSURANCE

SIC 721

Source of Funds for New Technology Spending

Employment Size	Internal Funds	External Funds
	Percent	Percent
Small (50-199)	100	0
Medium (200-999)	100	0
Large (1000+)	100	0
Total Firms	100	0

16 percent to justify the application of funds. All large and medium sized firms use this test. Those who use a pay-back criterion (65 percent of the industry, all small and medium firms and half of the large firms) look for investment to pay for itself within three years (Table 6). Some firms use both methods.

4.2.2 Source of New Capital Spending

The industry expects to finance 100 percent of the anticipated investment programs from internal funds. (Table 7).

4.3 Employment to 1995

This section reviews expected trends in employment patterns and outlines the most important factors affecting aggregate industry employment in Ontario.

4.3.1 Factors Affecting Employment

Firms in the Life Insurance Industry identified the most important factor affecting their employment level in Ontario as the introduction of new technology. The next most important factors are industry-wide growth and the ability to increase sales or market share. Another contributing factor is change in the regulation of the industry (recorded as "other" in Table 8).

4.3.2 Employment Outlook

The firms surveyed indicate that the Life Insurance Industry expects employment to stabilize in 1985.

Results of
Question 11a,b,c

TABLE 8: LIFE INSURANCE

SIC 721

Most Important Factors Affecting The Firms' Employment in Ontario

Factor		Percent of Firms by Employment Size			
		Small (50-199)	Medium (200-999)	Large (1000+)	Total Firms
PROFITABILITY/ FINANCIAL STRENGTH	First	0	0	0	0
	Second	0	0	0	0
	Third (1)	0	0	67	52
	Weighted Importance	0.0	0.0	0.7	0.5
INCREASE SALES/ INCREASE MARKET SHARE	First	0	100	33	35
	Second	0	0	0	0
	Third	0	0	0	0
	Weighted Importance	0.0	3.0	1.0	1.1
INTRODUCTION OF NEW TECHNOLOGY	First	0	0	33	26
	Second	0	0	67	52
	Third	0	0	0	0
	Weighted Importance	0.0	0.0	2.3	1.8
ABILITY TO COMPETE	First	0	0	0	0
	Second	0	100	0	9
	Third	0	0	33	26
	Weighted Importance	0.0	2.0	0.3	0.4
INDUSTRY-WIDE GROWTH	First	100	0	33	39
	Second	0	0	0	0
	Third	0	0	0	0
	Weighted Importance	3.0	0.0	1.0	1.2
OVERALL ECONOMIC GROWTH	First	0	0	0	0
	Second	0	0	33	26
	Third	0	0	0	0
	Weighted Importance	0.0	0.0	0.7	0.5
ALL OTHERS	First	0	0	0	0
	Second	0	0	0	0
	Third	0	100	0	9
	Weighted Importance	0.0	1.0	0.0	0.1

(1) Weighted Importance = (First % x 3) + (Second % x 2) + (Third % x 1)

Results of Question 11d

TABLE 9: LIFE INSURANCE

SIC 721

Firms' Employment Trends in Ontario

Firms by Employment Size	Total Employment and Average Annual Compound Rate of Change (1)			
	Estimated		Expected	
	Rate		Rate	
	1981-1984	1984-1985	1985-1990	1990-1995
Small (50-199)	16.5	5.5	32.0	4.5
Medium (200-999)	4.5	0.0	0.5	1.0
Large (1000+)	0.5	-0.5	0.5	0.5
Total Firms	1.0	0.0	2.0	1.0

(1) Rounded to closest 0.5%.

For the 1985-1990 period, the firms anticipate experiencing a 2.0 percent annual average increase in employment levels. For the period 1990-1995, they expect employment to average 1.0 percent growth per annum (see Table 9, opposite).

4.3.3 Trends in Part-Time Work

Part-time employment currently accounts for 3 percent of employment in the Life Insurance Industry. Survey respondents expect that in the 1985-1990 period, part-time employment will increase to 4.5 percent and then to 5.5 percent of the total in the period 1990 to 1995.

4.4 Changes in Occupational Structure

Table 10 shows trends in firms' occupational structure in the Life Insurance Industry from 1981 to 1995. Each major occupational group is expressed as a percent of total industry employment, by year. Trends over time for minor occupational groups are expressed as: +, increasing share of total employment; -, decreasing share of total employment and o, no change in share of industry employment.

The 1971 Canadian Classification and Dictionary of Occupations was used to classify and describe the occupations outlined in Table 10. Survey respondents were provided with a detailed description of each occupation; however, in some cases, differences in interpretation of the classifications occurred.

Table 10 suggests:

- a modest increase in Managerial Administrative and Related occupations from 20.2 percent of total employment in 1985 to 20.5 percent of total employment in 1990 and 21.5 percent in 1995.

Results of Question 12

TABLE 10: LIFE INSURANCE SIC 721

Trends in Firms' Occupational Structure

Percent of Total Employment by Selected Occupational Categories

Occupations	Estimated			Expected	
	1981	1984	1985	1990	1995
MANAGERIAL, ADMINISTRATIVE AND RELATED	19.8	19.8	20.2	20.5	21.5
• Financial Management		0	+	+	0
• Financial Officers		0	0	0	+
• All Other Managerial		0	+	0	+
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS	8.7	8.3	8.5	11.6	12.6
• Systems Analysts and Computer Programmers		0	+	+	+
• All Other Natural Science, Engineering and Mathematics		–	0	+	+
CLERICAL	56.4	54.2	53.9	50.5	48.9
• Secretaries		0	0	–	0
• Typists/Clerk Typists (includes Word Processing Operators)		–	0	0	0
• Bookkeepers and Accounting Clerks		–	0	–	–
• Insurance Clerks		–	–	0	–
• EDP Equipment Operators		0	0	0	0
• Library File Clerks		0	0	–	–
• Claims Adjustors		–	0	–	–
• General Office Clerks		–	0	–	–
• Others		–	–	0	0
SALES	9.7	12.1	12.0	13.1	13.1
• Supervisor of Sales		–	0	0	0
• Insurance Salesmen and Agents		+	0	+	0
OTHER OCCUPATIONS	5.3	5.5	5.5	4.3	3.8
TOTAL	100%	100%	100%	100%	100%

+ increase – decrease 0 no change

- a significant increase in Natural Sciences, Engineering and Mathematics occupations. These occupations currently account for 8.5 percent of total employment in 1985. By 1995, their share of the total is expected to increase to 12.6 percent.

- sharp declines in Clerical occupations from 53.9 percent of total employment in 1985 to 48.9 percent in 1995.

- increases in Sales occupations' share of total employment from 12.0 percent in 1985 to 13.1 percent by 1995.

To summarize, Table 10 indicates that the following major occupational categories will experience increases in their share of total employment from 1985 to 1995:

- Managerial, Administrative and Related,

- Natural Sciences, Engineering and Mathematics, and

- Sales.

Clerical is the only major occupational category expected to experience a decrease in its share of total employment.

Results of
Question 6

TABLE 11: LIFE INSURANCE

SIC 721

Impact of Technology on Selected Occupations in Firms 1985-1995

Occupations	Percent of Firms		
	Oversupply	Shortage	No Response
MANAGERIAL, ADMINISTRATIVE AND RELATED			
• Financial Management	0	48	52
• Financial Officers	0	48	52
• All Other Managerial	48	0	52
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS			
• Systems Analysts and Computer Programmers	39	26	35
CLERICAL			
• Secretaries	39	9	52
• Typists/Clerk Typists (includes Word Processing Operators)	48	0	52
• Bookkeepers and Accounting Clerks	74	0	26
• Insurance Clerks	48	0	52
• EDP Equipment Operators	65	0	35
• Library File Clerks	74	0	26
• Claims Adjustors	39	0	61
• General Office Clerks	74	0	26
SALES			
• Supervisor of Sales	13	35	52
• Insurance Salesmen and Agents	13	35	52
OTHER OCCUPATIONS	0	11	89

5.0 EMPLOYMENT EFFECTS OF NEW TECHNOLOGY

This chapter reviews the survey results on the employment effects of new technology in terms of skills match and requirements and impact on skill levels and job content.

5.1 Effects on Occupations

Table 11 summarizes firms' views on how technology will affect their occupational requirements. The table indicates that future shortages of supply will occur for occupational groups expected to increase their share of total employment by 1995. These groups include:

- Managerial, Administrative and Related occupations. 48 percent of firms expect a shortage of financial management and financial officers.
- Sales supervisors and insurance salesmen and agents.

An oversupply is expected to occur in Clerical occupations especially bookkeepers and accounting clerks, library/file clerks, general office clerks and EDP equipment operators.

Little or no change is expected in relative share of employment over the decade ahead with the exception of financial officers and insurance salesmen and agents, where an increase in share is anticipated.

5.2 Likely Steps to Deal with Skills Oversupply

Attrition was the most commonly cited step to deal with an oversupply of skills in the Clerical occupations in the Life Insurance Industry. Other steps in order of importance were:

- upgrading, and

Results of
Question 7

TABLE 12: LIFE INSURANCE

SIC 721

Steps Firms Will Likely Take to Deal With an OVERSUPPLY of Skills 1985-1995

Occupations	Most Commonly Cited	Second Most Common	Third Most Common
MANAGERIAL, ADMINISTRATIVE AND RELATED			
• All Other Managerial	Upgrade	Transfer	Relocate
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS			
• Systems Analysts and Computer Programmers	Attrition	Upgrade	Relocate
CLERICAL			
• Secretaries	Attrition	Upgrade	Layoff
• Typists/Clerk Typists (includes Word Processing Operators)	Attrition	Upgrade	Layoff
• Bookkeepers and Accounting Clerks	Attrition	Upgrade	Layoff
• Insurance Clerks	Attrition	Upgrade	Layoff
• EDP Equipment Operators	Attrition	Upgrade	Layoff
• Library File Clerks	Attrition	Upgrade	Layoff
• Claims Adjustors	Attrition	Upgrade	Layoff
• General Office Clerks	Attrition	Upgrade	Layoff
SALES			
• Supervisor of Sales	Upgrade	Relocate	(1)
• Insurance Salesmen and Agents	Upgrade	Relocate	(1)

(1) Only two steps mentioned

Results of
Question 8

TABLE 13: LIFE INSURANCE SIC 721

Steps Firms Will Likely Take to Deal With a
SHORTAGE of Skills
1985-1995

Occupations	Most Commonly Cited	Second Most Common	Third Most Common
MANAGERIAL, ADMINISTRATIVE AND RELATED			
• Financial Management	Recruit	Retrain	(1)
• Financial Officers	Recruit	Retrain	(1)
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS			
• Systems Analysts and Computer Programmers	Recruit	Retrain	Other
CLERICAL			
• Secretaries	Recruit	Upgrade	(1)
SALES			
• Supervisor of Sales	Upgrade	Recruit	(1)
• Insurance Salesmen and Agents	Recruit	(2)	(2)
OTHER OCCUPATIONS	Recruit	Retrain	(1)

(1) Only 2 steps mentioned
(2) Only 1 step mentioned

Results of
Question 9

TABLE 14: LIFE INSURANCE

SIC 721

Impact of Technology on Skill Levels and Job Content

Occupations	Percent of Firms (1)								
	Skills Required			Time to Achieve Proficiency			Knowledge of Firm's Operations		
	+	-	0	+	-	0	+	-	0
MANAGERIAL, ADMINISTRATIVE AND RELATED	0	0	100	0	0	100	0	0	100
• Financial Management	59	0	41	59	0	41	38	0	62
• Financial Officers	38	21	41	38	0	62	18	0	82
• All Other Managerial	74	0	26	74	0	26	48	0	52
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS									
• Systems Analysts and Computer Programmers	74	0	26	74	0	26	48	0	52
CLERICAL									
• Secretaries	74	26	0	74	0	26	48	0	52
• Typists/Clerk Typists (includes Word Processing Operators)	74	26	0	74	0	26	48	0	52
• Bookkeepers and Accounting Clerks	74	26	0	74	26	0	48	26	26
• Insurance Clerks	74	26	0	74	0	26	48	0	52
• EDP Equipment Operators	48	26	26	48	26	26	13	52	35
• Library File Clerks	48	52	0	65	0	35	39	26	35
• Claims Adjustors	22	52	26	48	0	52	22	0	78
• General Office Clerks	74	26	0	74	0	26	74	0	26
SALES									
• Supervisor of Sales	48	26	26	48	26	26	22	0	78
• Insurance Salesmen and Agents	38	21	41	38	21	41	18	0	82
OTHER OCCUPATIONS	100	0	0	100	0	0	100	0	0

+ increase - decrease 0 remain the same

(1) Non-responses excluded.

- layoffs were the most frequent third choice.

The ranking of these steps was consistent across all the Clerical occupations (see Table 12).

5.3 Likely Steps to Deal with Skills Shortages

The most commonly cited steps for dealing with shortages of skills which may develop are recruitment of employees and retraining current employees. See Table 13. Upgrading was mentioned for sales supervisors and secretaries.

5.4 Technology Impact on Skill Levels and Job Content

Respondents were asked to judge the expected impact of new technology on selected occupations in terms of:

- skills required,
- time required to achieve proficiency, and
- knowledge of their firms' operations.

Respondents indicated that they expect skill requirements to increase across most occupations, with the notable exception of claims adjustors. Opinions were mixed about an increase in skills for insurance salesmen and agents.

Respondents expect that more time will be required to achieve proficiency in most Managerial and Clerical occupations. Systems analysts will also require more time to achieve proficiency. Opinions on Sales occupations were divided.

Similarly, respondents expect that more knowledge will be required of firm's operations; however, EDP equipment operators are expected to require less knowledge (see Table 14).

5.5 Training Costs and New Technology

Life Insurance Industry respondents estimate that they currently spend about 5 percent of their total labour costs on training. This proportion is expected to increase to 7 percent by 1995. Training costs related to new technology are not expected to increase significantly from the 60 percent today. Small firms spend 10 percent on training costs now and expect these costs to rise to 20 percent of the total by 1995. 75 percent of their training costs are related to new technology. Medium sized firms spend far less on training than do small or large firms.

6.0 LABOUR RELATIONS ENVIRONMENT

This chapter discusses the labour relations environment in the industry.

6.1 Industrial Relations Environment: Historical

In the insurance industries in Ontario there is very little union representation as only 652 employees are unionized. The major union is an independent local which deals with the Ontario Hospital Association and in doing so represents 64 percent of the unionized employees. Table 15 shows the breakdown of union agreements in the insurance industry. The Ontario Hospital Association has the only union agreement with more than 200 employees and has no clauses recognizing technological change.

Most insurance companies have employee associations which represent employees in discussions of technological change and in staffing requirements. Many insurance companies have found it necessary to restructure their work force to adapt to new technology through a combined process of attrition of the clerical staff and hiring of people with new skills (in computer sciences and sales oriented occupations). The basic requirement has been to reduce the number of clerks "who would do what they were told" and increase the support staff that can "think for themselves" and make use of the new technologies at their disposal.

6.2 Technology Change Clauses

Survey respondents indicated that the Life Insurance Industry has no formal requirement to discuss technological change with employees.

TABLE 15

INDUSTRIAL RELATIONS: INSURANCE INDUSTRY

UNION	NUMBER OF MEMBERS	MAJOR EMPLOYER*	LOCATION	TECHNICAL CHANGE CLAUSE IN AGREEMENT
INDEPENDENT LOCAL	417	Ontario Hospital Association	Toronto	None
OFFICE & PROFESSIONAL EMPLOYEES	140	Cumis & Cuna Insurance	Burlington	NA
	33	Union Du Canada Assurance-Vie	Ottawa & Vanier	NA
	12	Labourers Pension Fund Central & East Canada	Toronto	NA
	2	Plumbers 800 HW & Pension Trust Fund	Sudbury	NA
AUTO WORKERS	48	Green Shield Prepaid Services	Windsor & Toronto	NA

NA Information not available for agreements with less than 200 employees on data base from Ontario Ministry of Labour.

SOURCE: Collective Bargaining Agreement System, Ontario Ministry of Labour.

6.3 Management's Perception of their Union's Position on New Technology

This question did not apply because of the low rate of unionization.

6.4 Nature of Worker Involvement in the Process of Technological Change

Firms were asked whether they had a formal mechanism for worker participation in setting production and/or sales targets, improving productivity and/or quality and adopting new technology.

Survey respondents indicated that 100 percent of the small and medium companies and 33 percent of the large companies have a formal mechanism for setting production and sales targets at the company level.

By contrast, there are formal agreements for improving productivity and quality in 74 percent of the firms, including all of the small and medium firms. Only 35 percent have a formal means of gaining workers' participation in adopting new technology. None of the small firms and all the medium firms have a mechanism with respect to technology.

6.5 Views on Involving Workers in Decisions on Adopting New Technology

Management and union leaders were asked to what extent and how should management involve workers in decisions regarding the adoption of new technologies.

All small and medium firms and 50 percent of the large firms expressed a need for full worker involvement in the process of adopting new technology; 25 percent of the large firms stated a preference for prior consultation and 21 percent of all firms felt that involvement was necessary only for these needing training.

Results of Question 18

SIC 721

TABLE 16: LIFE INSURANCE

Planning for Technological Change

Firms by Employment Size	Strategic Plan	Human Resource Plan		Capital Investment Plan		Perceived Integration Between Capital and Human Plans (1)
	Percent of Firms With Plan	Percent of Firms With Plan	Length of Planning Horizon	Percent of Firms With Plan	Length of Planning Horizon	
Small (50-199)	100	100	5 years	100	6 years	5.0
Medium (200-999)	100	0	-	0	-	-
Large (1000+)	75	50	4 years	25	-	1.5
Total Firms	79	52	4 years	31	6 years	2.2

(1) Using a scale of 1 to 5; 1 represents "Not at all integrated" and 5 "Highly integrated".

7.0 Planning for Technological Change

This chapter reports survey results regarding questions related to planning for technological change. A summary of these results appears in Table 16.

The survey indicates that 79 percent of the Life Insurance Industry makes use of strategic planning techniques. 52 percent have a human resource with an average time horizon of four years, while 31 percent have a capital investment plan for the next six years. Small firms indicated a high degree of integration between the human resource and investment plans, but the average degree of integration for the industry is weak.

SECTION II - GENERAL INSURANCE

PART II - HISTORICAL TRENDS 1971-1984

2.0 INTRODUCTION

This section of the report provides an historical analysis of trends in the General Insurance Industry for the period 1971 to 1984.

2.1 The Structure of the Industry

There were about 200 insurance companies offering various types of property and casualty insurance in Ontario in 1981. They employed about 20,000 people and they wrote $3.7 billion in insurance premiums, about 43 percent of total premiums written in Canada in that year. Automobile insurance accounts for about 41 percent of premiums written in Ontario (Appendix D, Table D.10). This includes insurance against theft, fire, collision and personal injury. Property insurance accounts for 25 percent of premiums - this includes insurance against fire, theft and other damage for the home and its contents and for commercial properties and their contents. Other insurance lines provide coverage to insure completion of a contract (surety bonds) and to insure ships, aircraft, and boilers and machinery.

The volume and composition of business is shown in Table D.10. The table also includes health insurance, which is offered by only a few general insurers. Most health insurance premiums are written by life insurance companies. However, the nature of the risk and the policy is more closely associated with general than with life insurance. SIC 721, insurance carriers, covers the activities of both life and general insurance companies.

The General Insurance Industry is not dominated by very large firms the way the life insurance industry is. The seven largest companies selling automobile insurance account for 39 percent of that type of insurance (Table D.11). These same seven companies are among the largest property insurers, though there are other firms of equal size. The seven account for 23 percent of property insurance premiums written in Ontario in 1981. This shows the variation in specialization - companies with a big market share in one type of insurance tend to have a smaller market share in other lines of insurance. Some companies also specialize in one or two provinces.

The purpose of general insurance is to protect individuals and organizations against losses due to theft, fire or other physical damage and to insure them for liability claims resulting from injuries to other persons or damage to their property. In general then, the amount of insurance in force is determined by two factors:

- The value of the capital stock being insured (a car, a house, an office building).
- The risk that damage will occur.

The industry keeps records of the incidence of car thefts, fire losses and liability claims. Premiums are set on the basis of the past loss experience for individuals or buildings with certain characteristics. When an insurance company sells a large insurance policy, it will normally reduce its exposure to losses by re-insuring part of the risk. This is done by transferring a portion of the premium to another insurance company. When losses occur, the reinsurer pays the primary insurance company, not the policy holder. General insurance is therefore a two-tiered industry - primary insurers, whose names are widely known in the marketplace, and reinsurers, who are less widely known because they have no direct interface with people buying insurance. Reinsurers are an important force in the industry, however, because the premiums they set for accepting a given risk have a strong influence on the premiums charged by the primary insurer.

The majority of the sales force for general insurance are independent brokers and agents who sell on commission. They will represent two or more primary insurers, selecting the policies available to suit their clients. Brokers and agents are part of SIC 735 and will be discussed in Section III of this report. Some large general insurers are "direct writers" meaning they have a salaried sales force representing a single company. State Farm Insurance and All State are the two major companies (both based in the United States) that have a direct sales force.

Canadian incorporated companies dominate the industry, accounting for 63.2 percent of total assets of companies operating in Canada, but the majority of these firms are owned or controlled by British or American investors.

2.2 The Market Environment

The general insurance business is highly competitive. The actual insurance side of the business incurred underwriting losses in eight of the ten years from 1973 to 1982 (Table D.12). These operating losses have been more than offset by the steady flow of investment income. In 1983, for example, the Canadian industry earned $995 million on total assets of $15.4 billion. Investment income is earned on funds supplied to the insurers by shareholders and on unearned premium reserves and claims reserves. A high proportion of these funds (63 percent) were invested in Canadian bonds and debentures and in shares of Canadian companies.

The data in Table D.12 show that the General Insurance Industry has gone through two cycles of intense competition since the early 1970's. In 1974, underwriting losses reached a peak of $267 million. The losses then declined and for two years - 1977 and 1978 - there were small operating profits. This coincided with the period of wage and price controls. In 1979, the industry experienced a loss and the losses rose to a record $872 million in 1981. In that year, investment income was barely large enough to cover the underwriting loss. The size of the loss diminished in 1982 and interviews suggest this trend has continued in 1983 and 1984. However, it is clear that the industry is suffering from excess capacity, with too many insurers seeking the same business. They are, therefore, quoting premiums that do not cover their operating costs.

Indeed, many individual companies report that their ratio of losses and expenses to premiums earned is over 100 percent. In other words, premiums earned do not cover the cost of insurance. If the losses exceed investment income, then the company begins to consume its surplus and faces a period of adjustment. This has already begun to occur in some sectors of the market. A few, small, insurance companies have withdrawn from the market and others are being much more selective about the risks they will accept. They are also beginning to increase premiums. Primary insurers are in the process of closing small regional offices and being much more selective in the risks they underwrite. This may eventually have the effect of increasing premiums, especially for liability insurance. One industry spokesman has said: "What we really need is lot of big mergers in the industry."[1]

The pressures in Canada are a small echo of the strains in the United States where underwriting losses in 1983 reached a record $9 billion because of rising insurance claims and an epidemic of price cutting. Since the reinsurance market has strong international linkages, the recent firming in premiums in the international market is likely to spill over into Canada.

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[1] "Surplus Supply plagues property-casualty sector". Financial Post.

2.2.1 Excess Capacity

The reasons for this excess capacity are:

1. Sluggish growth in demand. This in turn reflects a number of factors:
    - Weak economic growth has reduced the growth in assets and inventories requiring insurance.
    - Slower rates of inflation have curbed the rise in real estate and other asset values and thus affected the value of property being insured.
    - Many large corporations have adopted self insurance programs over the past decade.
2. A significant increase in supply - the capacity of the industry to deliver insurance.
    - The entry of new capital (from Europe and the Middle East) seeking opportunities in the relatively secure and profitable financial markets of North America. This money was attracted partly by relative profitability and partly by the strength of the U.S. and Canadian currencies vis-a- vis those in Europe. The means of entry has varied from acquisitions, to increases in capitalization of existing firms, to upgrading the representation of a foreign firm in Canada. Much of the money has gone into the reinsurance side of the business where barriers to entry are low.

- The impact of computerization and communication technologies. The insurance industry requires a great deal of routine paperwork. As the routines are computerized and information systems are centralized, a given company's capacity to administer policies increases. As costs of writing new business declined, companies were prepared to quote lower premiums.

3. A more selective and demanding consumer. The increase in education levels and the shock of inflation in the 1970's made insurance buyers much more sophisticated. Many customers began to place more emphasis on price than on the "reputation" of the insurer, thus increasing the price competition.

2.2.2 The Regulatory Framework

The General Insurance Industry is regulated for solvency by the provincial and federal Superintendents of Insurance. They are concerned mainly with the quality of the insurance offered and the appropriateness of loss reserves and of investment policies.

The health of the industry is also strongly influenced by the laws governing claims for injury. The recent Ontario Family Law Reform Act, for example, has significantly increased the potential for suits between members of the same family for losses of care, custody and companionship. Such suits were not allowed under the previous law and the industry has been surprised by the size of the awards granted by the courts.

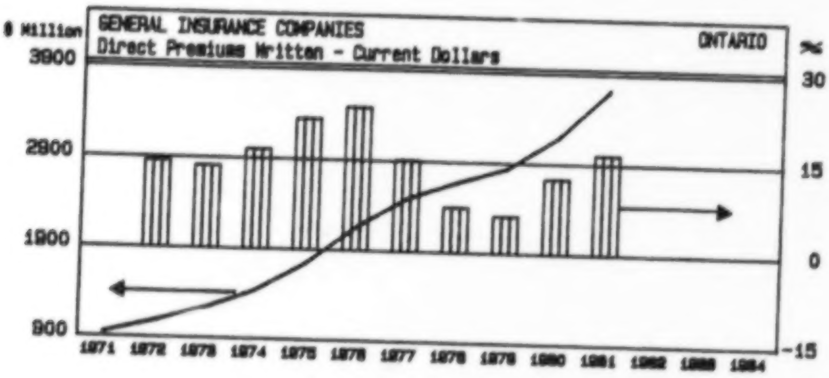
The industry is currently under pressure to create an assessment system that would generate funds to protect people whose insurance company goes out of business.

2.3 Industry Trends

Table D.13 in Appendix D presents key industry indicators for the years 1971 to 1984. This section will also refer to indicators for Insurance Carriers, where industry specific data is lacking. As in the case of life insurance, no deflator is available to generate constant dollar information.

2.3.1 Aggregate Output

EXHIBIT 1



The General Insurance Industry wrote $3.7 billion in insurance premiums in 1981 (see Table D.13). This included $2.8 billion in property and casualty insurance and $940 million in accident and health insurance.

Property and casualty premiums increased at an average rate of 13.9 percent between 1971 and 1981. The increases were fairly steady over the decade, except for two years of slow growth in 1978 and 1979. While no indicators of volume are available, the industry has been plagued by extensive price cutting over the past few years, especially since 1982. This suggests that volumes have increased significantly.

2.3.2 Competitive Position

Competition within the industry is intense and is illustrated by the extent of the operating losses shown in Table D.12. All the firms in the industry are under pressure to reduce costs of processing policies and claims and administrative expenses in order to minimize those losses.

2.3.3 Capital Investment

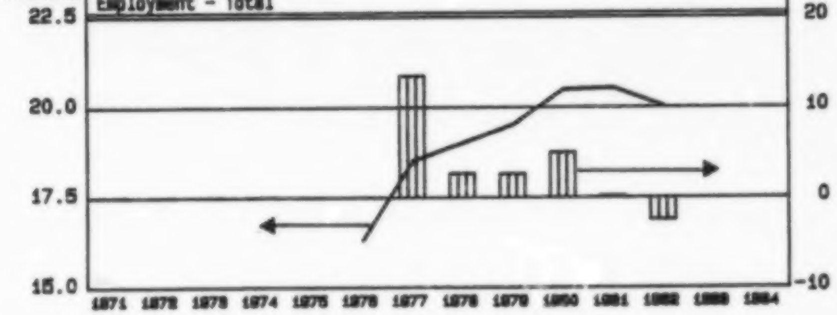
The only investment data available is for Insurance Carriers. This is reported in Section III of this report.

2.3.4 Employment

The discussion of employment includes an analysis of aggregate trends and occupational changes.

- Aggregate Trends

EXHIBIT 2



Total employment for Insurance Carriers in Canada rose at an annual average rate of 1.6 percent from 1971 to 1981 (Table D.5). Meanwhile, life insurance employment in Ontario rose at an average annual rate of 2.7 percent over the same period. This would suggest that General Insurance employment in Canada grew more slowly than 1.6 percent in the 1970's. However, estimates of employment in general insurance have been compiled by the Insurance Bureau of Canada only since 1976. Employment has increased from 16,300 in 1976 to 20,000 in 1982, an average annual increase of 3.5 percent (see Table D.13). Employment rose by 13.5 percent in 1977 and at much slower rates from 1978 to 1981. It declined by 2.5 percent in 1982 and has probably continued to drop since 1982 as a result of business failures and corporate consolidations.

Ontario has a more than proportional share of total employment in this industry because a large number of national firms have their head offices in Ontario. One company estimated that head office staff accounted for 25 percent of total employment in Canada. The migration of head offices from Quebec to Ontario since the early 1970's explains why employment growth in the Ontario industry has been stronger than the national trend for Insurance Carriers.

- Occupational Changes

No data specific to general insurance is available. Insurance Carriers are discussed as a whole on pages 21 and 22 in Section I of this report with corresponding Tables D.8 and D.9 in Appendix D.

PART III - FUTURE TRENDS: THE SURVEY RESULTS

Part III of this study presents the survey results which discuss the firms' surveyed opinions as to future trends in technological adoption and employment impacts.

3.0 ADOPTION OF NEW TECHNOLOGY

This chapter reviews the expected trends in the adoption of new technologies in the General Insurance Industry and the factors driving the need for and affecting the rate of technology adoption.

3.1 New Technologies and Rates of Adoption

The General Insurance Industry, like the life insurers, has undergone two pronounced waves of technological change; the first was in the early 1970's and the second was in the early 1980's. The earliest reported use of a computer in this segment of the industry was in 1956 at Zurich Insurance.

The driving force behind the adoption of the technologies in the past has been the desire to reduce operating costs. Much of the cost saving has been passed along to the customer as a result of price competition among insurance companies.

In the 1980's and 1990's, the pressure to adopt new technologies will also include the desire to make use of them in order to generate new products or to achieve qualitative improvements in services offered in the marketplace in order to compete with other financial institutions for a share of the personal savings dollar.

The penetration of computer and other technologies is described in Section I, the Life Insurance section of this report, on pages 23 and 24.

The pace of technological change will continue strongly through the rest of the 1980's but will slow during the 1990's. Table 2 summarizes the percentage of firms who have adopted new technologies before 1985, or will by 1990, or will after 1990 and before 1995. The following provides observations on the survey findings.

The industry expects to complete the implementation of Customer Sales and Service Technologies by 1990, but adoption of Office Automation and Telecommunications Technologies will spill over into the 1990's. There did not appear to be any noticeable difference in the rate of adoption between small and medium sized companies. No large companies responded to the survey. There are few, if any firms with more than 1,000 employees.

3.1.1 Customer Sales and Service Technologies

Industry penetration of customer sales and service technologies is extensive for most systems, particularly in larger firms. The small firms expect to catch up in the next five years. Adoption has been minimal for computerized insurance needs analysis, brokerage management systems and on-line terminals for group insurance customers. However, some firms plan to acquire these by 1990.

3.1.2 Office Automation Technologies

All firms surveyed use word processing now. Most firms use micro or personal computers and the rest expect to by 1990. At present, 47 percent use 4th generation computer languages but full adoption is planned within five years.

Results of
Question 3

SIC 721

TABLE 2: GENERAL INSURANCE

Percent of Firms Planning to Adopt New Technologies by Employment Size (1)

Technologies	Before 1985			1985-1990			1990-1995		
	Small	Medium	Total	Small	Medium	Total	Small	Medium	Total
CUSTOMER SALES AND SERVICE TECHNOLOGIES									
On-Line Policy/Client Data Bases	50	100	72	50	-	28	-	-	-
Computerized Insurance Needs Analysis	0	25	11	100	25	66	-	-	-
Computerized Contract Generation	50	100	72	50	-	28	-	-	-
Electronic Claims Processing Systems	50	75	61	50	25	39	-	-	-
Automatic Insurance Verification	25	100	59	50	-	28	-	-	-
Computerized Rating/Underwriting	25	75	47	75	25	53	-	-	-
Brokerage Management Systems	25	0	14	75	25	53	-	-	-
On-Line Terminal for Group Insurance Customers	0	0	0	25	33	28	-	-	-
Other	0	0	0	-	25	11	-	-	-
OFFICE OR OFFICE AUTOMATION TECHNOLOGIES									
Word Processing	100	100	100	-	-	-	-	-	-
Electronic Filing	50	50	50	25	25	25	-	25	11
Microcomputers/Personal Computers	100	75	89	-	25	11	-	25	11
Internal Data Base Management Systems	50	75	61	50	25	39	-	25	11
Local Area Networks (LANs)	0	25	11	50	50	50	25	25	25
4th Generation Computer Languages	25	75	47	75	25	53	-	-	-
Computerized Decision Support Systems	75	75	75	25	25	25	-	-	-
Voice Activated Computers	0	0	0	25	-	14	25	25	25
Artificial Intelligence/Expert Systems	0	0	0	25	-	14	-	25	11
Integrated Work Stations	0	0	0	100	100	100	-	25	11
Other	0	0	0	-	25	11	-	-	-
TELECOMMUNICATIONS TECHNOLOGIES									
Private Automatic Branch Exchange (PABX)	75	50	64	25	50	36	-	-	-
Electronic Mail	25	75	47	50	50	50	-	-	-
Voice Mail	0	0	0	25	50	36	-	-	-
Facsimile with Built-In Microprocessor (FAX)	33	50	42	-	50	26	-	-	-
Satellite/Microwave Systems	0	0	0	-	25	11	25	-	14
Video Conferencing	0	0	0	-	25	11	-	50	22
Fibre Optics	0	0	0	-	25	11	-	50	22

(1) '0' used prior to 1985 to indicate have not adopted. '-' used for period 1985-1990 and 1990-1995 to indicate respondents, at the time of survey, are not planning to adopt this technology or 'don't know'. Responses are not mutually exclusive.

All the firms expect to adopt integrated work stations by 1990. Computerized decision support systems, local area networks and electronic filing are already used by a majority of firms and their use will spread over the next ten years.

3.1.3 Telecommunications Technologies

Many firms in the General Insurance Industry already use private automatic branch exchange (PABX) and the remaining firms anticipate upgrading by 1990. Electronic mail and FAX systems are not as widely used but are expected to be in place within five years. Other new telecommunications systems may see limited use, especially satellite/ microwave systems, video conferencing and fibre optics. None of the firms use voice-mail at present, but some adoption is expected by 1990.

3.2 Forces Driving the Need to Adopt New Technology

A few key forces are driving the industry to adopt new technologies. Table 3, summarizes the results of the survey. The most important factors are:

- Competitive pressures, created by excess capacity in the industry. This was particularly important to the small firms.

- Increase productivity. The industry recognizes the need to gain greater control of the paper flow. 75 percent of the medium firms ranked this first.

- Customer demands for changes ranked third.

Results of
Question 4

TABLE 3: GENERAL INSURANCE

SIC 721

Most Important Factors Driving the Need to Adopt New Technologies

Factor		Percent of Firms by Employment Size Small (20-199)	 Medium (200-999)	 Total Firms
COMPETITIVE PRESSURES	First	50	25	39
	Second	50	0	28
	Third (1)	0	25	11
	Weighted Importance	2.5	1.0	1.8
STRATEGIC	First	0	0	0
	Second	0	0	0
	Third	25	0	14
	Weighted Importance	0.3	0.0	0.1
CUSTOMER DEMANDS FOR CHANGES	First	25	0	14
	Second	0	25	11
	Third	25	0	14
	Weighted Importance	1.0	0.5	0.8
INCREASE PROFITABILITY	First	0	0	0
	Second	25	0	14
	Third	0	0	0
	Weighted Importance	0.5	0.0	0.3
INCREASE PRODUCTIVITY	First	25	75	47
	Second	0	25	11
	Third	0	0	0
	Weighted Importance	0.8	2.8	1.7
INCREASE MANAGEMENT INFORMATION	First	0	0	0
	Second	0	0	0
	Third	25	0	14
	Weighted Importance	0.3	0.0	0.1
LOWER COSTS	First	0	0	0
	Second	0	25	11
	Third	0	25	11
	Weighted Importance	0.0	0.8	0.3
INCREASE SKILLS/ ORGANIZATIONAL CAPABILITY	First	0	0	0
	Second	0	0	0
	Third	0	25	11
	Weighted Importance	0.0	0.3	0.1
INCREASE QUALITY	First	0	0	0
	Second	0	25	11
	Third	0	0	0
	Weighted Importance	0.0	0.5	0.2

(1) Weighted Importance = (First % x 3) + (Second % x 2) + (Third % x 1)

Results of
Question 5

SIC 721

TABLE 4: GENERAL INSURANCE

Most Important Factors that Could Slow the Rate of New Technology Adoption

Factor		Percent of Firms by Employment Size		
		Small (20-199)	Medium (200-999)	Total Firms
ABILITY TO FINANCE	First	50	0	28
	Second	0	0	0
	Third	0	0	0
	Weighted Importance (1)	1.5	0.0	0.8
COST OF NEW TECHNOLOGY	First	0	25	11
	Second	50	25	39
	Third	25	0	14
	Weighted Importance	1.3	1.3	1.3
LACK OF GOVERNMENT ASSISTANCE	First	25	0	14
	Second	0	0	0
	Third	0	0	0
	Weighted Importance	0.8	0.0	0.4
COMPETITIVE ENVIRONMENT	First	0	0	0
	Second	25	0	14
	Third	0	25	11
	Weighted Importance	0.5	0.3	0.4
UNION RESISTANCE	First	0	0	0
	Second	25	0	14
	Third	0	0	0
	Weighted Importance	0.5	0.0	0.3
LACK OF SKILLS AND/OR KNOW-HOW TO IMPLEMENT	First	25	25	25
	Second	0	25	11
	Third	0	0	0
	Weighted Importance	0.8	1.3	1.0
UNWILLINGNESS TO CHANGE	First	0	25	11
	Second	0	0	0
	Third	0	25	11
	Weighted Importance	0.0	1.0	0.5
ALL OTHERS	First	0	25	11
	Second	0	0	0
	Third	0	0	0
	Weighted Importance	0.0	0.8	0.3

(1) Weighted Importance = (First % x 3) + (Second % x 2) + (Third % x 1)

3.3 Factors that Could Slow the Rate of Technology Adoption

The survey participants identified the single most important factor that could slow the rate of technology adoption as the cost of new technology. See Table 4 for a summary.

The second most commonly cited factor that could slow adoption of technology is lack of skills or know-how to implement.

Small firms placed more emphasis on their ability to finance new technologies than did medium sized firms. The small firms also mentioned lack of government assistance as an inhibiting factor.

Results of Question 1

TABLE 5: GENERAL INSURANCE

SIC 721

Premiums Written in Ontario

Average Annual Compound Rate of Change (in Current Dollars) (1)

Firms by Employment Size	Estimated 1982-1983	Estimated 1983-1984	Estimated 1984-1985	Expected 1985-1990	Expected 1990-1995
Small (20-199)	4.0	5.0	6.0	4.0	4.5
Medium (200-999)	8.5	8.0	7.0	8.0	8.0
Total Firms	6.0	6.5	6.5	6.0	6.0

(1) Rounded to closest 0.5%

4.0 INDUSTRY OUTLOOK TO 1995

This chapter reviews the anticipated outlook for the General Insurance Industry in terms of aggregate output (i.e., premiums written in Ontario), investment plans, aggregate employment and changes in occupational structure to 1995.

4.1 Output to 1995

General Insurance premiums (in current dollars) increased by about 6.5 percent per year from 1983 to 1984. In 1985, the respondents are expecting this growth rate to be sustained. In the longer term the industry expects premium income to rise at about 6 percent per annum to 1995. The survey results are summarized in Table 5, opposite. Industry experts consulted projected somewhat higher growth rates, in the 6 to 8 percent range from 1985 to 1990 and 8 to 10 percent from 1990 to 1995.

4.2 Investment Patterns

The firm respondents indicate that the level of investment in the industry is expected to be about $17 million (in today's dollars) during the period 1985 to 1990. Of that amount, about 40 percent will take the form of machinery and equipment investment. About 70 percent of machinery and equipment investment expenditure will be related to new technology. Investment in machinery and equipment in the 1990-1995 period will be over 85 percent and 75 percent will be related to new technology. Based on the expert consultation it can be expected that nearly all capital investment will be related to new technology and will occur in machinery and equipment.

4.2.1 Justifying Financial Investment in New Technology

As with other investment, new technology investment is subjected to formal tests of profitability. About 16 percent of the firms use a return on investment test, but they did not provide the average rate of return required.

Results of Question 17e

TABLE 6: GENERAL INSURANCE

SIC 721

Justifying Financial Investment in New Technology

Firms by Employment Size	Pay-Back Period: % of Firms Using Pay-Back	Pay-Back Period: Average Period (Years)	Return on Investment: % of Firms Using ROI	Return on Investment: Average Rate (%)
Small (20-199)	67	2	33	n.a.
Medium (200-999)	75	5	0	n.a.
Total Firms	71	4	16	n.a.

n.a. no answer.
Answers not mutually exclusive.

Results of Question 17f

TABLE 7: GENERAL INSURANCE

SIC 721

Source of Funds for New Technology Spending

Employment Size	Internal Funds Percent	External Funds Percent
Small (20-199)	100	0
Medium (200-999)	100	0
Total Firms	100	0

71 percent of firms use a pay-back criterion and they look for investment to pay for itself within four years (Table 6). Small firms require a much shorter pay-back period (two years) than medium firms (five years).

4.2.2 Source of New Capital Spending

The industry expects to finance all of the anticipated investment programs from internal funds (Table 7).

4.3 Employment to 1995

This section reviews expected trends in employment patterns and outlines the most important factors affecting aggregate industry employment in Ontario.

4.3.1 Factors Affecting Employment

Firms in the General Insurance Industry identified the most important factor affecting their employment level in Ontario as industry-wide growth. The next most important factors are overall economic growth and the introduction of new technology. See Table 8.

Small firms identified their ability to increase sales or market share and their ability to compete as equally important while the medium sized firms ranked industry-wide growth as their main consideration for future employment.

4.3.2 Employment Outlook

The firms surveyed indicate that the General Insurance Industry expects employment to increase by 1.5 percent in 1985 after a three year period of no growth. Small firms experienced a decline of 2.0 percent per year from 1981 to 1984 and a further 0.5 percent decline is expected this year.

Results of
Question 11a,b,c

TABLE 8: GENERAL INSURANCE SIC 721

Most Important Factors Affecting
The Firms' Employment in Ontario

Factor		Small (20-199)	Medium (200-999)	Total Firms
		Percent of Firms by Employment Size		
PROFITABILITY/ FINANCIAL STRENGTH	First	0	25	11
	Second	0	0	0
	Third	0	0	0
	Weighted Importance (1)	0.0	0.8	0.3
INCREASE SALES/ INCREASE MARKET SHARE	First	25	0	15
	Second	0	0	0
	Third	0	0	0
	Weighted Importance	0.8	0.0	0.4
INTRODUCTION OF NEW TECHNOLOGY	First	0	0	0
	Second	0	50	22
	Third	0	25	12
	Weighted Importance	0.0	1.3	0.6
ABILITY TO COMPETE	First	25	0	14
	Second	0	0	0
	Third	0	25	11
	Weighted Importance	0.8	0.3	0.5
INDUSTRY-WIDE GROWTH	First	0	50	22
	Second	0	25	11
	Third	0	0	0
	Weighted Importance	0.0	2.0	0.9
OVERALL ECONOMIC GROWTH	First	0	25	11
	Second	0	25	11
	Third	0	0	0
	Weighted Importance	0.0	1.3	0.6
ALL OTHERS	First	0	0	0
	Second	25	0	14
	Third	0	25	11
	Weighted Importance	0.5	0.3	0.4

(1) Weighted Importance = (First % x 3) + (Second % x 2) + (Third % x 1)

Results of Question 11d

TABLE 9: GENERAL INSURANCE

SIC 721

Firms' Employment Trends in Ontario

Firms by Employment Size	Total Employment and Average Annual Compound Rate of Change (1)			
	Estimated		Expected	
	Rate		Rate	
	1981-1984	1984-1985	1985-1990	1990-1995
Small (20-199)	-2.0	-0.5	2.5	1.5
Medium (200-999)	0.0	1.5	1.5	1.5
Total Firms	0.0	1.5	1.5	1.5

(1) Rounded to closest 0.5%.

Results of
Question 12

TABLE 10: GENERAL INSURANCE

SIC 721

Trends in Firms' Occupational Structure

Occupations	Percent of Total Employment by Selected Occupational Categories				
	Estimated			Expected	
	1981	1984	1985	1990	1995
MANAGERIAL, ADMINISTRATIVE AND RELATED	9.9	10.4	10.4	10.3	9.9
• Financial Management					
• Financial Officers					
• All Other Managerial					
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS	7.4	8.0	8.5	9.2	9.3
• Systems Analysts and Computer Programmers					
• All Other Natural Science, Engineering and Mathematics					
CLERICAL	73.6	73.1	72.3	71.9	72.2
• Clerical Supervisors					
• Secretaries					
• Typists (includes Word Processing Operators)					
• Bookkeepers and Accounting Clerks					
• Insurance Clerks					
• EDP Equipment Operators					
• Library File Clerks					
• Claims Adjustors					
• General Office Clerks					
• All Other Clerks					
SALES	0.7	0.6	0.6	0.6	0.8
• Supervisor of Sales					
• Insurance Salesmen and Agents					
OTHER OCCUPATIONS	8.3	7.9	8.2	8.0	7.9
TOTAL	100%	100%	100%	100%	100%

+ increase - decrease 0 no change

Note: No information on specific occupations was made available by respondents.

For the 1985-1995 period, the firms anticipate a 1.5 percent annual average increase in employment levels. However, small firms see the prospect of stronger growth of 2.5 percent per year from 1985 to 1990 (see Table 9).

4.3.3 Trends in Part-Time Work

Part-time employment is currently about 10 percent of total employment in the General Insurance Industry. It is not expected to grow in the 1985-1995 period.

4.4 Changes in Occupational Structure

Table 10 shows trends in firms' occupational structure in the General Insurance industry from 1981 to 1995. Each major occupational group is expressed as a percent of total industry employment, by year. Trends over time for minor occupational groups are expressed as: +, increasing share of total employment; -, decreasing share of total employment and o, no change in share of industry employment.

The 1971 Canadian Classification and Dictionary of Occupations was used to classify and describe the occupations outlined in Table 10. Survey respondents were provided with a detailed description of each occupation; however, in some cases, differences in interpretation of the classifications occurred.

Table 10 suggests:

- A slight decline in Managerial Administrative and Related occupations from 10.4 percent of total employment in 1985 to 9.9 percent of total employment in 1995.

- A significant increase in Natural Sciences, Engineering and Mathematics occupations. These occupations represented 7.4 percent of total employment in 1981 and currently account for 8.5 percent of total employment in 1985. By 1995, their share of the total is expected to increase to 9.3 percent.

- Stabilization in Clerical occupations is expected after a modest decline from 73.6 percent in 1981 to 72.3 percent in 1985.

- Sales and Other occupations will not show much change. Most general insurance is sold through independent brokers and agents.

5.0 EMPLOYMENT EFFECTS OF NEW TECHNOLOGY

This chapter reviews the survey results on the employment effects of new technology in terms of skills match and requirements and impact on skill levels and job content.

5.1 Effects on Occupations

Table 11 summarizes firms' views on how technology will affect their occupational requirements. The table indicates that future shortages of supply will occur for occupational groups expected to increase their share of total employment by 1995. These groups include:

- Managerial, Administrative and Related occupations, especially financial management and financial officers.
- All the Natural Sciences, Engineering and Mathematics occupations, especially systems analysts and computer programmers.

Occupations where an oversupply is expected to occur are:

- All other Managerial occupations.
- Clerical occupations, especially typists/clerk typists, bookkeepers and accounting clerks, general office clerks, library/file clerks, and insurance clerks.

5.2 Likely Steps to Deal with Skills Oversupply

Attrition was the most commonly cited step to deal with an oversupply of skills in the Managerial and Clerical occupations. Other steps in order of importance were layoffs and retraining (see Table 12).

Results of Question 6

TABLE 11: GENERAL INSURANCE

SIC 721

Impact of Technology on Selected
Occupations in Firms
1985-1995

Occupations	Percent of Firms		
	Oversupply	Shortage	No Response
MANAGERIAL, ADMINISTRATIVE AND RELATED			
• Financial Management	11	78	11
• Financial Officers	23	66	11
• All Other Managerial	42	16	42
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS			
• Systems Analysts and Computer Programmers	28	47	25
CLERICAL			
• Secretaries	39	14	47
• Typists/Clerk Typists (includes Word Processing Operators)	89	0	11
• Bookkeepers and Accounting Clerks	89	0	11
• Insurance Clerks	75	0	25
• EDP Equipment Operators	50	36	14
• Library File Clerks	78	0	22
• Claims Adjustors	31	16	53
• General Office Clerks	89	0	11
SALES			
• Supervisor of Sales	14	14	72
• Insurance Salesmen and Agents	14	11	75

Results of
Question 7

TABLE 12: GENERAL INSURANCE

SIC 721

Steps Firms Will Likely Take to Deal With an OVERSUPPLY of Skills 1985-1995

Occupations	Most Commonly Cited	Second Most Common	Third Most Common
MANAGERIAL, ADMINISTRATIVE AND RELATED			
• Financial Management	Attrition	Retire	(1)
• Financial Officers	Attrition	Retire	(1)
• All Other Managerial	Attrition	Layoffs	Retire
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS	Attrition	Layoffs	(1)
• Systems Analysts and Computer Programmers	Attrition	Retrain	(1)
CLERICAL			
• Secretaries	Attrition	Retrain	Layoffs/ Transfer
• Typists/Clerk Typists (includes Word Processing Operators)	Layoffs	Attrition	Retrain
• Bookkeepers and Accounting Clerks	Attrition	Retrain	Layoffs
• Insurance Clerks	Attrition	Layoffs	Attrition
• EDP Equipment Operators	Retrain	Layoffs	Attrition
• Library File Clerks	Attrition	Layoffs	Retrain
• Claims Adjustors	Retrain	Layoffs	Attrition
• General Office Clerks	Attrition	Retrain	Layoffs
• Telephone Operators	Retrain	Layoffs	(1)
SALES			
• Supervisor of Sales	Attrition	Layoffs	(1)
• Insurance Salesmen and Agents	Attrition	(2)	(2)

(1) Only two steps mentioned.
(2) Only one step mentioned.

Results of
Question 8

TABLE 13: GENERAL INSURANCE SIC 721

Steps Firms Will Likely Take to Deal With a
SHORTAGE of Skills
1985-1995

Occupations	Most Commonly Cited	Second Most Common	Third Most Common
MANAGERIAL, ADMINISTRATIVE AND RELATED			
• Financial Management	Recruit	Upgrade	Retrain
• Financial Officers	Recruit	Upgrade	Contract Out
• All Other Managerial	Recruit	Upgrade	Other
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS			
• Systems Analysts and Computer Programmers	Retrain	Recruit	Upgrade
CLERICAL			
• Secretaries	Retrain	Recruit	(1)
• EDP Equipment Operators	Retrain	Recruit	(1)
• Claims Adjustors	Upgrade	Recruit	(1)
SALES			
• Supervisor of Sales	Recruit	Upgrade	(1)
• Insurance Salesmen and Agents	Recruit	Upgrade	(1)

(1) Only two steps mentioned.

5.3 Likely Steps to Deal with Skills Shortages

The most commonly cited steps for dealing with shortages of skills which may develop are recruitment of employees and upgrading the skills of current employees. See Table 13.

In the Managerial, Administrative and Related and the Natural Sciences, Engineering and Mathematics occupations, recruiting and upgrading of employees were the most commonly cited steps to deal with shortages. Retraining of current employees and recruiting were cited as important for Clerical occupations.

5.4 Technology Impact on Skill Levels and Job Content

Respondents were asked to judge the expected impact of new technology on selected occupations in terms of:

- skills required,
- time required to achieve proficiency, and
- knowledge of their firms' operations.

Respondents indicated that they expect skill requirements to increase across all occupations.

Respondents expect that more time will be required to achieve proficiency in most occupations, except many clerical posts. Respondents were more divided in their opinions on this question than on the question of skill requirements.

Similarly, respondents expect that more knowledge will be required of firm's operations, particularly in managerial and systems jobs. See Table 14.

Results of
Question 9

TABLE 14: GENERAL INSURANCE

SIC 721

Impact of Technology on Skill Levels and Job Content

	Percent of Firms (1)								
	Skills Required			Time to Achieve Proficiency			Knowledge of Firm's Operations		
Occupations	+	-	0	+	-	0	+	-	0
MANAGERIAL, ADMINISTRATIVE AND RELATED									
• Financial Management	100	0	0	53	25	22	100	0	0
• Financial Officers	100	0	0	64	25	11	78	11	11
• All Other Managerial	89	0	11	64	25	11	89	0	11
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS									
• Systems Analysts and Computer Programmers	100	0	0	64	14	22	89	11	0
CLERICAL									
• Secretaries	100	0	0	50	14	36	64	36	0
• Typists/Clerk Typists (includes Word Processing Operators)	64	36	0	25	50	25	61	14	25
• Bookkeepers and Accounting Clerks	89	11	0	25	25	50	64	0	36
• Insurance Clerks	78	11	11	53	36	11	64	11	25
• EDP Equipment Operators	50	11	39	25	25	50	50	0	50
• Library File Clerks	31	16	53	16	31	53	44	15	41
• Claims Adjustors	66	11	22	53	25	22	78	0	22
• General Office Clerks	75	14	11	50	28	22	61	14	25
SALES									
• Supervisor of Sales	82	0	18	82	0	18	82	0	18
• Insurance Salesmen and Agents	82	0	18	63	0	37	82	0	18

+ increase - decrease 0 remain the same
(1) Non-responses excluded.

5.5 Training Costs and New Technology

General Insurance Industry respondents estimate that they currently spend between 3 and 4 percent of their total labour costs on training. This proportion is expected to increase to 4.5 to 5.0 percent by 1995. Training costs related to new technology are expected to increase from 24 percent in 1984, to about 40 percent by 1995.

TABLE 15

INDUSTRIAL RELATIONS: INSURANCE INDUSTRY

UNION	NUMBER OF MEMBERS	MAJOR EMPLOYER*	LOCATION	TECHNICAL CHANGE CLAUSE IN AGREEMENT
INDEPENDENT LOCAL	417	Ontario Hospital Association	Toronto	None
OFFICE & PROFESSIONAL EMPLOYEES	140	Cumis & Cuna Insurance	Burlington	NA
	33	Union Du Canada Assurance-Vie	Ottawa & Vanier	NA
	12	Labourers Pension Fund Central & East Canada	Toronto	NA
	2	Plumbers 800 HW & Pension Trust Fund	Sudbury	NA
	48	Green Shield Prepaid Services	Windsor & Toronto	NA
AUTO WORKERS				

NA Information not available for agreements with less than 200 employees on data base from Ontario Ministry of Labour

SOURCE: Collective Bargaining Agreement System, Ontario Ministry of Labour.

6.0 Labour Relations Environment

This chapter discusses the labour relations environment in the industry.

6.1 Industrial Relations Environment: Historical

In the insurance industries in Ontario there is very little union representation as only 652 employees are unionized. The major union is an independent local which deals with the Ontario Hospital Association and in doing so represents 64 percent of the unionized employees. Table 15 shows the breakdown of union agreements in the Insurance Industry. The Ontario Hospital Association has the only union agreement with more than 200 employees and has no clauses recognizing technological change. Most insurance companies have employee associations which represent employees in discussions of technological change and in staffing requirements. Many insurance companies have found it necessary to restructure their work force to adapt to new technology, through a combined process of attrition of the clerical staff and hiring of people with new skills (in computer sciences and sales oriented occupations). The basic requirement has been to reduce the number of clerks "who would do what they were told" and increase the support staff that can "think for themselves" and make use of the new technologies at their disposal.

6.2 Trends in Unionization

No unionization was reported by the respondents.

6.3 Nature of Worker Involvement in the Process of Technological Change

Firms were asked whether they had a formal mechanism for worker participation in setting production and/or sales targets, improving productivity and/or quality and adopting new technology.

Only 25 percent of the survey respondents indicated that they had formal mechanisms for setting production and sales targets at the company level, but 42 percent had such mechanisms at the department or working group level.

47 percent have formal agreements for improving productivity and quality. Only 11 percent have a formal means of gaining workers' participation in adopting new technology.

In general, medium sized firms have a stronger tendency to formally promote worker participation than do small firms.

6.4 Views on Involving Workers in Decisions on Adopting New Technology

Management was asked to what extent and how management should involve workers in decisions regarding the adoption of new technologies.

58 percent of managers believe that full involvement is desirable and 16 percent expressed a preference for providing information only.

7.0 Planning for Technological Change

This chapter reports survey results regarding questions related to planning for technological change. A summary of these results appears in Table 16.

The survey indicates that 75 percent of the industry makes use of strategic planning techniques. About 72 percent have a human resource plan with a planning horizon of 6 years. 59 percent have a capital investment plan for the next five years. The small firms appear to be less organized both in making plans and in looking ahead. The respondents indicated that these two plans are moderately well integrated.

Results of
Question 18

TABLE 16: GENERAL INSURANCE

SIC 721

Planning for Technological Change

Firms by Employment Size	Strategic Plan	Human Resource Plan		Capital Investment Plan		Perceived Integration Between Capital and Human Plans (1)
	Percent of Firms With Plan	Percent of Firms With Plan	Length of Planning Horizon	Percent of Firms With Plan	Length of Planning Horizon	
Small (20-199)	75	50	5 years	25	2 years	3.0
Medium (200-999)	75	100	7 years	100	7 years	2.5
Total Firms	75	72	6 years	59	5 years	2.6

(1) Using a scale of 1 to 5; 1 represents "Not at all integrated" and 5 "Highly integrated".

SECTION III - INSURANCE BROKERS AND AGENTS

PART II - HISTORICAL TRENDS 1971 - 1984

2.0 INTRODUCTION

This Section of the report provides an historical analysis of trends in the Insurance Brokers and Agents Industry for the period 1971 to 1984.

2.1 The Structure of the Industry

There are more than 2,700 insurance brokerage firms in Ontario. Of these, 600 are sole proprietorships and 2,100 are corporate partnerships. There are also about 2,800 independent agents selling general insurance (that is, property and casualty, not life insurance) in Ontario. The brokers and agents together employ about 20,000 people and annual commissions earned in 1981 were about $850 million. Insurance brokers and agents act as the interface between the primary insurer or underwriter and the general public. Each broker will represent a number of different insurers and will direct his customers to the insurer whose insurance coverage and price appear to best suit the customer. Broker revenues consist of a commission which averages 14 to 15 percent of the premiums written (12.5 percent on automobile insurance and 17 percent on other lines).

The brokerage industry can be divided into three segments:

1. The ten large brokerage firms are listed in Appendix D, Table D.14. They handle the "jumbo" risks of large industrial firms and compete for group personal insurance sold to large groups of employees. These firms accounted for about 30 percent of the Canadian market in 1981 and are believed to handle about 90 percent of the insurance business generated by large companies. Five of the top ten firms are foreign owned or controlled and their

international connections give them a special advantage in competing for the business of foreign-owned companies here in Canada. The largest firm, Reed Stenhouse, has just announced a merger with Alexander and Alexander, the second largest broker in the United States. This will lead to a consolidation of Reed Stenhouse and the number six firm, Sedgwick Alexander, which is controlled by Alexander and Alexander. (Many of these companies are also major suppliers of employee benefit consulting, but those operations are not included in this report).

2. A large number of medium sized brokerages (mostly Canadian owned) which handle commercial insurance for small and medium sized companies in manufacturing, retailing and service industries. They tend to focus on a regional market.

3. An even larger number of small brokers who sell personal lines of insurance to individuals to insure their homes, cars and personal effects in a particular community or region.

There is some competition among these three segments of the business - the jumbo firms sell personal lines to some clients, for example. But each segment tends to operate in a fairly isolated niche in the marketplace. Competition is also segmented by geography. The small personal lines agency and the medium sized broker will sell only in their local community. However, the big firms have offices across Canada (see Table D.14) and even in other countries.

Independent insurance agents differ from brokers because they represent a single insurance company. They operate in local markets, often from their own home. They also work on commission and are licensed by the Ontario Department of Insurance, once they have been sponsored by a particular company.

The Province of Ontario requires all employees in a broker's office who deal with the public in any way to be licensed by the Registered Insurance Brokers of Ontario (RIBO). The RIBO is not a government agency, but was set up by the industry in 1981 to administer the industry. It is responsible for monitoring solvency and for setting standards of education and financing. The RIBO's records include extensive but incomplete information on the people working in the industry because they exclude bookkeepers, telephone operators and any "back office" staff. The general rule of thumb is that every active broker in the industry will require a support staff of 2 to 3 people. The Canadian Federation of Insurance Agents and Brokers Associations estimated in a recent study the employment structure for Canada shown in Table D.15. About 80 percent of the employees in the industry are women.

2.2 The Market Environment

Insurance brokers are paid on commission; they have no power to set insurance premiums. Their main role is to identify the customer's insurance needs and then "shop" for appropriate coverage from the insurance companies with which they do business. Earnings depend on the value of business sold and the size of the commission which is negotiated. Commission rates have been falling slowly over the post war period - from 25 percent in the 1960's to 14-15 percent in the 1970's, and to a recent low of 13.6 percent in 1981 and 1982. The "hard times" and intense competition in the general insurance business spill over into the brokerage industry in two ways - price cutting on premiums reduces the base on which commissions are calculated, and low underwriting profits encourage the insurer to reduce commission rates.

The industry is currently engaged in a serious debate about how to introduce new technologies into the brokerage side of the business. Ideally, the broker should be integrated into the insurance company's central files on policies and claims, but it is difficult to tie into the systems of numerous different companies. Large brokers can represent as many as 60 insurers and smaller brokers will typically represent 6 to 10 insurers. Two problems arise:

- How can the broker maintain the flexibility of dealing with numerous insurers and still have his information system integrated with those insurers?
- Once the decision to integrate is made, who bears the cost and who gains the benefits of integration? About 30 percent of brokers are already extensively computerized and another 40 percent have respectable computer support. However, much of their existing equipment and software - mostly from Wang and GEAC - is not compatible with the large systems in place in the general insurance companies.

The ultimate responses to these two questions will have a significant impact on the structure of the industry.

The brokerage industry appears to be in a period of consolidation, after five years of low profitability and strong competition for market share. In the past, consolidation has taken place through a series of mergers since that is the most effective way for an expanding company to acquire a new list of clients.[1]

2.3 Industry Trends

Tables D.16 and D.17 present key industry indicators for the years 1971 to 1984. The data on the industry is severely limited. Statistics Canada data for SIC 735 includes both insurance and real estate brokers and agents. Since the real estate business is structured differently, follows different cycles, and is large enough to swamp the trends in the insurance agencies, it was decided not to use this data. The tables are, therefore, based on estimates compiled by Currie, Coopers & Lybrand from a combination of industry sources and the Federal and Ontario Superintendents of Insurance.

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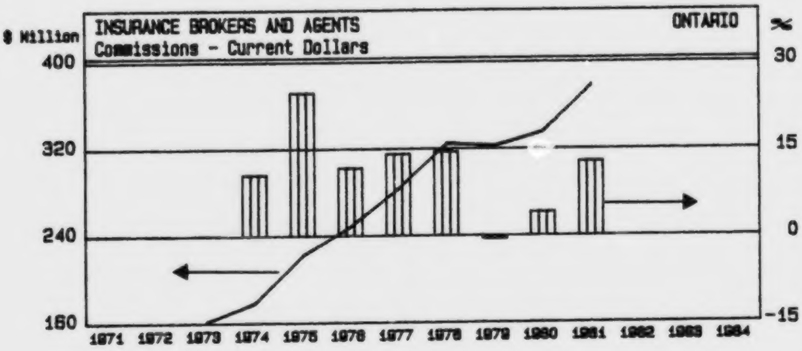
[1] See, for example, Frank Dougan, "How and Why Canada Cured Its Broker Acquisition Fever", Risk Management, March, 1983.

2.3.1 Aggregate Output

EXHIBIT I



No information on output exists for this industry and no deflators are available. Tables D.16 and D.17, therefore, present estimates of Ontario revenues.

Estimated commissions of Ontario brokers and agents increased from $161 million in 1973 (the first year for which data is available) to $378 million in 1981, an average annual gain of 11.3 percent. This compares with an increase of 14.1 percent per year in direct premiums written over the same period. Commissions increased very rapidly from 1975 to 1978, partly because total direct premiums written were rising quickly from 1975 to 1977, but also because the estimated average commission rate increased from 14.2 percent in 1977 to 15.5 percent in 1978. After that, both the growth in volumes and commission rates declined, so estimated commissions declined by 0.6 percent in 1979, rose by 4.0 percent in 1980 and then jumped 12.8 percent in 1981.

2.3.2 Competitive Position

No data is available on this subject.

2.3.3 Capital Investment

The only data on investment is that for insurance, trust and loan companies reported on pages 17 to 19 in Section I.

2.3.4 Employment

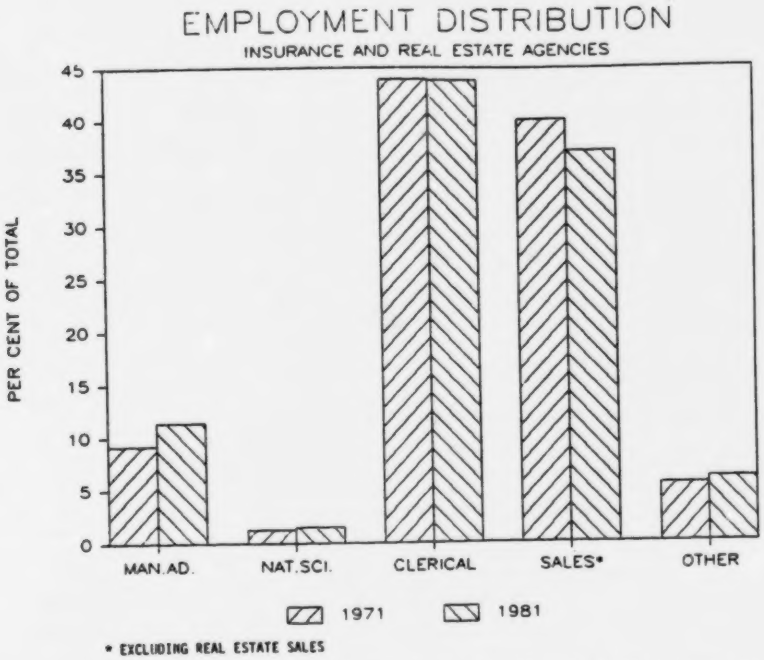
The discussion of employment includes an analysis of aggregate trends and occupational change.

- Aggregate Trends

  The data available in Tables D.16 and D.17 are not good enough to allow a trend analysis. However, the recent introduction of computers and the pressures for consolidation in the brokerage industry both suggest that employment has stopped rising.

- **Occupational Changes**

EXHIBIT 2



Census data in Table D.18 indicate that total employment in the insurance and real estate sector (SIC 735) in Ontario increased by 4.4 percent per year from 1971 when it was 30,710 to 1981 when employment was 47,075. However, the fastest growth occurred in the one category that can be clearly attributed to real estate - Real Estate Sales. We have therefore removed this category from the tabulations (see Table D.18). This does not eliminate any of the Clerical or Managerial employees associated with real estate, but removes at least one distortion in applying the census data to insurance brokers and agents. The revised total shows employment rising from 22,755 in 1971 to 31,315 in 1981, an average annual increase of 3.2 percent.

The biggest increases in employment in percentage terms were in Managerial, Administrative and Related

(5.5 percent) and in Natural Sciences, Engineering and Mathematics (4.9 percent). However, the biggest numerical increases were in Sales, up 2,495 and Clerical occupations, up 3,730.

There is not much detail given at the more detailed occupational level. However, the biggest increases were in insurance sales and bookkeeping occupations. Growth in typists and clerk-typists was below the average for the industry and the number of sales supervisors actually declined.

The analysis by sex in Table D.19 indicates that female representation in the industry, excluding real estate sales, has increased from 48.7 percent in 1971 to 57.4 percent in 1981. The total increase in jobs was 6,910. Over half of this increase (3,870 jobs) occurred in Clerical jobs, and almost 30 percent was in Sales occupations. Female representation is rising in all occupational groups at the broad occupational level. The biggest increase in the female share of jobs occurred in Sales, rising from 12.7 to 26.9 percent of total employed over the decade.

At the more detailed occupational level, it is clear that women dominated the traditional clerical positions, but they made new inroads in both sales supervision and insurance sales occupations, raising their representation to 14.3 and 31.5 percent respectively.

PART III - FUTURE TRENDS: THE SURVEY RESULTS

Part III of this study presents the survey results which discuss the firms' surveyed opinions as to future trends in technological adoption and employment impacts.

3.0 ADOPTION OF NEW TECHNOLOGY

This chapter reviews the expected trends in the adoption of new technologies in the Insurance Brokers and Agents Industry and the factors driving the need for and affecting the rate of technology adoption.

3.1 New Technologies and Rates of Adoption

Insurance brokers need one central policy data file so they can integrate marketing, client service, policy insurance and word processing. They also need on-line access to insurance company rates, coverage and terms. In the United States, the problem of integrating the broker and insurance company systems has not arisen to the same degree because most U.S. companies bill the insurance customer directly. In Canada, 85 percent of personal insurance is billed by the broker or agent on behalf of the insurance company.

The advent of computers and communication systems in the brokerage sector was delayed for some years until the systems were scaled down to meet their needs. Wang and GEAC were the first two companies to recognize the potential of this market and they are well established. But each broker went his own way in the 1970's and the industry is now struggling with the problem of integration. (Experts compare the problem to the introduction of airline reservation systems or automated banking, but point out that insurance is a very fragmented industry at both the wholesale and retail level). The clear implication is, however, that the industry is on the brink of a major new wave of technological change.

Opinions differ widely on the potential impact. The optimists argue that computers plus integrated information systems will enable the industry to offer a new range of services - mass marketing of personal lines through payroll deduction schemes, for example. They also expect that integrated information systems will allow licensed support staff to be the "primary sales contact" with customers coming in to make inquiries. This, they argue, will upgrade the quality of some jobs in the brokerage office.

The pessimists[1] are concerned about job loss and about polarization of the workplace into an office with no intermediate positions between the machine operator and senior professionals. This will limit the potential for the people at the bottom of the ladder (mostly women) to move up the ladder. This is especially important in the insurance business because, as one education specialist pointed out, the majority of insurance professionals start in the business after high school and are trained by a combination of on the job learning and professional upgrading through courses provided by the industry. He also said that women outnumber men on these courses by three to one.

The pace of technological change will continue strongly through the early 1990's for all the technologies. Table 2 summarizes the percentage of firms who have adopted new technologies before 1985, or will by 1990, or will after 1990 and before 1995. The following provides observations on the survey findings.

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[1] An unpublished report by the Canadian Federation of Insurance Agent & Broker Associations forecasts that 11,000 to 14,000 jobs will be lost in the next decade in Canada.

Results of
Question 3

TABLE 2: INSURANCE AGENTS AND BROKERS

SIC 735

Percent of Firms Planning to Adopt New Technologies by Employment Size (1)

Technologies	Before 1985			1985-1990			1990-1995		
	Small	Medium	Total	Small	Medium	Total	Small	Medium	Total
CUSTOMER SALES AND SERVICE TECHNOLOGIES									
On-Line Policy/Client Data Bases	40	67	46	40	67	46	20	-	16
Computerized Insurance Needs Analysis	40	67	46	60	-	47	20	-	16
Computerized Contract Generation	0	67	14	60	67	61	20	-	16
Electronic Claims Processing Systems	20	0	16	60	67	61	-	-	-
Automatic Insurance Verification	40	0	32	40	67	46	-	-	-
Computerized Rating/Underwriting	0	100	21	80	67	77	-	-	-
Brokerage Management Systems	60	100	69	40	-	32	-	-	-
On-Line Terminal for Group Insurance Customers	0	0	0	20	-	18	60	-	55
Other	0	0	0	-	33	7	-	-	-
OFFICE OR OFFICE AUTOMATION TECHNOLOGIES									
Word Processing	80	100	85	40	-	32	-	-	-
Electronic Filing	20	0	16	20	100	37	20	33	23
Microcomputers/Personal Computers	80	67	77	20	-	16	-	-	-
Internal Data Base Management Systems	60	67	61	20	33	23	20	-	16
Local Area Networks (LANs)	20	100	37	60	-	48	20	-	16
4th Generation Computer Languages	20	0	16	20	67	30	20	-	16
Computerized Decision Support Systems	20	67	30	20	33	23	20	-	16
Voice Activated Computers	0	0	0	-	-	-	60	33	54
Artificial Intelligence/Expert Systems	0	0	0	-	-	-	80	33	70
Integrated Work Stations	20	0	16	-	33	7	60	67	61
Other	0	0	0	-	-	-	-	-	-
TELECOMMUNICATIONS TECHNOLOGIES									
Private Automatic Branch Exchange (PABX)	40	67	46	40	33	39	20	-	16
Electronic Mail	0	0	0	60	67	61	20	33	23
Voice Mail	0	0	0	-	-	-	60	33	54
Facsimile with Built-In Microprocessor (FAX)	0	67	14	-	-	-	20	-	16
Satellite/Microwave Systems	0	0	0	-	-	-	60	33	54
Video Conferencing	0	33	7	20	33	23	40	-	32
Fibre Optics	0	0	0	-	-	-	60	67	61
Other	0	33	7	-	-	-	-	-	-

(1) '0' used prior to 1985 to indicate have not adopted. '-' used for period 1985-1990 and 1990-1995 to indicate respondents, at the time of survey, are not planning to adopt this technology or 'don't know'. Responses are not mutually exclusive.

In general, medium firms have been quicker to adopt new technologies than small firms. The period 1985 to 1990 will be a time of rapid technological change for the small firms, particularly in customer sales and service application.

3.1.1 Customer Sales and Service Technologies

The industry has already widely adopted such new technologies as on-line data bases and computerized insurance needs analysis, which are in use by 46 percent of firms. Brokerage management systems and automatic insurance verification are also in use. During the 1985 to 1990 period, the industry intends to enlarge its use of these technologies but devote even greater attention to such technologies as computerized rating, electronic claims processing and computerized contract generation. Firms are indefinite about their plans after 1990 but a majority of small firms mention that they intend to purchase and set up on-line terminal facilities for group insurance customers.

3.1.2 Office Automation Technologies

A majority of the industry has already purchased modern word processing systems and personal computers and set up an internal data base management system. Firms will build on these purchases in the years to 1990 and also extend their use of local area networks, electronic filing and computerized decision support. The first half of the 1990's should see significant purchases, especially by small firms, of voice activated computers, artificial intelligence systems and integrated work stations.

3.1.3 Telecommunications Technologies

The only technology which the industry as a whole has adopted widely is private automatic branch exchanges, in use by 46 percent of firms. Medium sized firms are also

Results of Question 4

TABLE 3: INSURANCE AGENTS AND BROKERS

SIC 735

Most Important Factors Driving Need to Adopt New Technologies

Factor		Percent of Firms by Employment Size		
		Small (50-199)	Medium (200-999)	Total Firms
COMPETITIVE PRESSURES	First	40	67	46
	Second	0	0	0
	Third (1)	40	0	32
	Weighted Importance	1.6	2.0	1.7
CUSTOMER DEMANDS FOR CHANGES	First	20	33	23
	Second	0	0	0
	Third	0	0	0
	Weighted Importance	0.6	1.0	0.7
INCREASE PROFITABILITY	First	0	0	0
	Second	20	0	16
	Third	0	0	0
	Weighted Importance	0.4	0.0	0.3
INCREASE PRODUCTIVITY	First	40	0	32
	Second	0	33	7
	Third	0	67	14
	Weighted Importance	1.2	1.3	1.2
INCREASE MANAGEMENT INFORMATION	First	0	0	0
	Second	0	0	0
	Third	40	0	32
	Weighted Importance	0.4	0.0	0.3
INCREASE QUALITY	First	0	0	0
	Second	20	33	23
	Third	0	33	7
	Weighted Importance	0.4	1.0	0.5
LOWER COSTS	First	0	0	0
	Second	20	33	23
	Third	0	0	0
	Weighted Importance	0.4	0.7	0.5
INCREASE SKILLS/ ORGANIZATIONAL CAPABILITY	First	0	0	0
	Second	20	0	16
	Third	0	0	0
	Weighted Importance	0.4	0.0	0.3
ENTER NEW MARKETS/ GROWTH	First	0	0	0
	Second	20	0	16
	Third	0	0	0
	Weighted Importance	0.4	0.0	0.3

(1) Weighted Importance = (First % x 3) + (Second % x 2) + (Third % x 1)

using facsimile machines and video conferencing. However, the next ten years, especially after 1990, will see investment in electronic mail, voice mail, satellite systems and fibre optics communications. Small firms will make up for the slight lag in adoption behind medium sized firms in many cases by 1995.

3.2 Forces Driving the Need to Adopt New Technology

A few key forces are driving the industry to adopt new technologies. Table 3, opposite, summarizes the results of the survey. Both small and medium firms ranked these factors in the same order. The most important ones are:

- Increase competition. The need to keep up with the competition in terms of controlling costs and providing new services. This was of prime importance to the medium firms in particular.

- Increase productivity. The industry recognizes the need to gain greater control of the paper flow. Small firms ranked this of equal importance with competition while the medium firms rank it highly as third.

- Customer demands for changes.

3.3 Factors that Could Slow the Rate of Technology Adoption

The survey participants identified the single most important factor that could slow the rate of technology adoption as the cost of new technology. Medium firms put this first and small firms second (See Table 4, opposite).

The second most commonly cited factor that could slow adoption of technology is the ability to finance. This was rated first by small firms.

The third most common factor was poor economic conditions, of equal concern to the small firms as the cost of new technology.

Results of Question 5

TABLE 4: INSURANCE AGENTS AND BROKERS

SIC 735

Most Important Factors that Could Slow the Rate of New Technology Adoption

Factor		Percent of Firms by Employment Size		
		Small (50-199)	Medium (200-999)	Total Firms
ABILITY TO FINANCE	First	40	0	32
	Second	0	0	0
	Third (1)	0	0	0
	Weighted Importance	1.2	0.0	1.0
COST OF NEW TECHNOLOGY	First	20	100	37
	Second	20	0	16
	Third	0	0	0
	Weighted Importance	1.0	3.0	1.4
COMPETITIVE ENVIRONMENT	First	0	0	0
	Second	20	0	16
	Third	0	0	0
	Weighted Importance	0.4	0.0	0.3
POOR ECONOMIC CONDITIONS	First	20	0	16
	Second	20	0	16
	Third	0	33	7
	Weighted Importance	1.0	0.3	0.9
UNION RESISTANCE	First	0	0	0
	Second	0	0	0
	Third	0	33	7
	Weighted Importance	0.0	0.3	0.1
LACK OF SKILLS AND/OR KNOW-HOW TO IMPLEMENT	First	0	0	0
	Second	20	33	23
	Third	0	0	0
	Weighted Importance	0.4	0.7	0.5
LACK OF NEW TECHNOLOGY STANDARDIZATION	First	20	0	16
	Second	0	33	7
	Third	0	0	0
	Weighted Importance	0.6	0.7	0.6
UNWILLINGNESS TO CHANGE	First	0	0	0
	Second	0	33	7
	Third	0	0	0
	Weighted Importance	0.0	0.7	0.1
ALL OTHERS	First	0	0	0
	Second	0	0	0
	Third	20	0	16
	Weighted Importance	0.2	0.0	0.2

(1) Weighted Importance = (First % x 3) + (Second % x 2) + (Third % x 1)

4.0 INDUSTRY OUTLOOK TO 1995

This chapter reviews the anticipated outlook for the Insurance Brokers and Agents Industry in terms of aggregate output (i.e., commissions earned in Ontario), investment plans, aggregate employment and changes in occupational structure to 1995.

4.1 Output to 1995

Insurance commissions in (current dollars) increased by 2 to 3 percent per year in 1983 and 1984. They are expected to rise by 6.5 percent in 1985 and to grow at an average annual rate of 5 percent per year from 1985 to 1995. However, there is a sharp divergence in the views of small and medium firms. Medium firms (with over 200 employees) experienced sharp declines in commissions in 1983 and 1984. They expect a good recovery in 1985, but are much more cautious about future growth than the small firms. They project increases of 2.5 percent per year compared to a bouyant 6 percent per year for small firms. These figures may be affected by confusion over whether or not to adjust for inflation, although the questionnaire asked for current dollar estimates. The survey results are summarized in Table 5.

4.2 Investment Patterns

The firm respondents indicate that the level of investment in the industry is expected to be in excess of $2.5 million during the period 1985 to 1990. Of that amount, 63 percent will take the form of machinery and equipment investment. About 75 percent of plant and equipment investment expenditure will be related to new technology. The survey results indicate a decline in investment to $1.5 million in 1990 to 1995, with machinery accounting for 90 percent of the total. 66 percent of that capital investment will be related to new technology.

Results of Question 1

TABLE 5: INSURANCE AGENTS AND BROKERS

SIC 735

Commissions Earned in Ontario

Firms by Employment Size	Average Annual Compound Rate of Change (in Constant Dollars) (1)				
	Estimated			Expected	
	1982-1983	1983-1984	1984-1985	1985-1990	1990-1995
Small (50-199)	6.0	4.5	6.0	6.0	6.0
Medium (200-999)	-6.5	-6.5	8.5	2.5	2.5
Total Firms	3.0	2.0	6.5	5.0	5.0

(1) Rounded to closest 0.5%

4.2.1 Justifying Financial Investment in New Technology

As with other investment, new technology investment is subjected to formal tests of profitability. Small firms in the industry appear to require a return on investment of about 15 percent to justify the application of funds. About 16 percent of firms use a return on investment criterion. Likewise, those who use a pay-back criterion (53 percent of the industry including all the medium sized firms) look for investment to pay for itself within four years (Table 6).

4.2.2 Source of New Capital Spending

85 percent of the firms surveyed expect to finance the anticipated investment programs from internal funds. This includes 90 percent of the small firms and 67 percent of medium firms. See Table 7.

4.3 Employment to 1995

This section reviews expected trends in employment patterns and outlines the most important factors affecting aggregate industry employment in Ontario.

4.3.1 Factors Affecting Employment

Firms in the Insurance Brokers and Agents Industry identified the most important factor affecting their employment level in Ontario as the ability to increase sales and market share. The next most important factor is the introduction of new technology and third is profitability or financial strength.

The "other" factor mentioned was the extent of merger or acquisition activity in the industry. See Table 8.

Results of Question 17e

TABLE 6: INSURANCE AGENTS AND BROKERS SIC 735

Justifying Financial Investment in New Technology

	Pay-Back Period		Return on Investment	
Firms by Employment Size	% of Firms Using Pay-Back	Average Period (Years)	% of Firms Using ROI	Average Rate (%)
Small (50-199)	40	4	20	15.0
Medium (200-999)	100	5	0	-
Total Firms	53	4	16	15.0

Answers not mutually exclusive.

Results of Question 17f

TABLE 7: INSURANCE AGENTS AND BROKERS SIC 735

Source of Funds for New Technology Spending

Firms by Employment Size	Internal Funds Percent	External Funds Percent
Small (50-199)	90	10
Medium (200-999)	67	33
Total Firms	85	15

Results of Question 11a,b,c

TABLE 8: INSURANCE AGENTS AND BROKERS

SIC 735

Most Important Factors Affecting The Firms' Employment in Ontario

Factor		Percent of Firms by Employment Size		
		Small (50-199)	Medium (200-999)	Total Firms
PROFITABILITY/ FINANCIAL STRENGTH	First	20	0	16
	Second	40	0	32
	Third (1)	0	0	0
	Weighted Importance	1.4	0.0	1.1
INCREASE SALES/ INCREASE MARKET SHARE	First	40	67	46
	Second	0	0	0
	Third	0	33	7
	Weighted Importance	1.2	2.3	1.4
INTRODUCTION OF NEW TECHNOLOGY	First	0	33	7
	Second	40	33	39
	Third	20	33	23
	Weighted Importance	1.0	2.0	1.2
AVAILABILITY OF NECESSARY SKILLS	First	0	0	0
	Second	0	0	0
	Third	20	0	16
	Weighted Importance	0.2	0.0	0.2
INDUSTRY-WIDE GROWTH	First	40	0	32
	Second	0	0	0
	Third	0	0	0
	Weighted Importance	1.2	0.0	1.0
ALL OTHERS	First	0	0	0
	Second	0	67	14
	Third	0	0	0
	Weighted Importance	0.0	1.3	0.3

(1) Weighted Importance = (First % x 3) + (Second % x 2) + (Third % x 1)

4.3.2 Employment Outlook

The firms surveyed indicate that the Insurance Brokers and Agents Industry expects employment to increase by 2.5 percent in 1985 and to continue at that level of increase until 1990. For the period 1990 to 1995, they expect employment to average 1.5 percent growth per annum (see Table 9, over). Again small firms are much more optimistic than medium firms which foresee growth averaging 0.5 percent per year to 1995.

4.3.3 Trends in Part-Time Work

Part-time employment currently accounts for 1.5 percent of total employment in the industry. Survey respondents expect that part-time employment will increase to 2.5 percent by 1985 and to 4 percent by 1995. Small firms will become especially dependent on part-time employees; they will rise to 7.5 percent of the total by 1995.

4.4 Changes in Occupational Structure

Table 10 shows trends in firms' occupational structure in the Insurance Agents and Brokers Industry from 1981 to 1995. Each major occupational group is expressed as a percent of total industry employment, by year. Trends over time for minor occupational groups are expressed as: +, increasing share of total employment; -, decreasing share of total employment; and o, no change in share of industry employment.

Results of
Question 11d

TABLE 9: INSURANCE AGENTS AND BROKERS SIC 735

Firms' Employment Trends in Ontario

Firms by Employment Size	Total Employment and Average Annual Compound Rate of Change (1)			
	Estimated Rate		Expected Rate	
	1981-1984	1984-1985	1985-1990	1990-1995
Small (50-199)	2.0	6.5	6.0	3.0
Medium (200-999)	1.0	0.5	0.5	0.5
Total Firms	1.0	2.5	2.5	1.5

(1) Rounded to closest 0.5%.

Results of
Question 12

TABLE 10: INSURANCE AGENTS AND BROKERS SIC 735

Trends in Firms' Occupational Structure

Occupations	Percent of Total Employment by Selected Occupational Categories				
	Estimated			Expected	
	1981	1984	1985	1990	1995
MANAGERIAL, ADMINISTRATIVE AND RELATED	9.9	12.8	12.9	12.5	12.0
• Financial Management		+	0	-	-
• Financial Officers		+	0	-	-
• All Other Managerial		+	+	-	-
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS	3.6	3.5	3.6	3.4	4.1
• Systems Analysts and Computer Programmers		-	+	+	+
• All Other		0	0	-	-
CLERICAL	51.0	49.3	48.4	47.7	46.4
• Secretaries		-	-	0	0
• Typists/Clerk Typists (includes Word Processing Operators)		-	-	0	0
• Bookkeepers and Accounting Clerks		-	-	-	-
• Insurance Clerks		-	0	0	0
• EDP Equipment Operators		+	0	+	0
• Library File Clerks		+	0	0	-
• Claims Adjustors		0	0	0	0
• General Office Clerks		0	0	-	0
• All Other Clerks		0	0	0	0
SALES	26.0	25.1	25.8	27.8	28.8
• Supervisor of Sales		+	0	-	+
• Insurance Salesmen and Agents		-	+	+	+
OTHER OCCUPATIONS	9.5	9.3	9.4	8.5	8.7
TOTAL	100%	100%	100%	100%	100%

+ increase - decrease 0 no change

The 1971 Canadian Classification and Dictionary of Occupations was used to classify and describe the occupations outlined in Table 10. Survey respondents were provided with a detailed description of each occupation; however, in some cases, differences in interpretation of the classifications occurred.

Table 10 suggests:

- a significant increase in Managerial Administrative and Related occupations from 1981 to 1985, followed by a slight decline to 12 percent by 1995.

- a modest increase in Natural Sciences, Engineering and Mathematics occupations. These occupations represented 3.6 percent of total employment in 1981. By 1995, their share of the total is expected to increase to 4.1 percent with systems analysts and computer programmers increasing their share of employment.

- a significant decline in Clerical jobs from 51.0 percent in 1981 to 48.4 percent in 1985 to 46.4 percent by 1995. Amongst individual occupations, bookkeepers and accounting clerks will contribute to the declining share of total employment.

- a significant increase in Sales positions from 25.8 percent in 1985 to 28.8 percent by 1990. Insurance salesmen and agents are expected to contribute to this increase.

5.0 EMPLOYMENT EFFECTS OF NEW TECHNOLOGY

This chapter reviews the survey results on the employment effects of new technology in terms of skills match and requirements and impact on skill levels and job content.

5.1 Effects on Occupations

Table 11 summarizes firms' views on how technology will affect their occupational requirements. The table indicates that opinions about shortages and oversupply are very mixed. Occupations where there is a clear plurality of firms expecting oversupply in the period 1985 to 1995 are all in the Clerical group. They include:

- Secretaries;
- Typists/clerk typists; and
- Library/file Clerks.

Occupations where shortages are expected to occur are:

- Systems analysts and computer programmers;
- EDP equipment operators;
- Supervisor of sales; and
- Insurance salesmen and agents.

5.2 Likely Steps to Deal with Skills Oversupply

Attrition was the most commonly cited step to deal with an oversupply of skills in all the occupational categories. Other steps in order of importance were:

- Retraining,
- Lateral transfers, and
- Upgrading.

Results of
Question 6

TABLE 11: INSURANCE AGENTS AND BROKERS

SIC 735

Impact of Technology on Selected Occupations in Firms 1985-1995

Occupations	Percent of Firms		
	Oversupply	Shortage	No Response
MANAGERIAL, ADMINISTRATIVE AND RELATED			
• Financial Management	23	23	54
• Financial Officers	23	23	54
• All Other Managerial	39	23	39
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS			
• Systems Analysts and Computer Programmers	16	61	23
CLERICAL			
• Secretaries	54	23	23
• Typists/Clerk Typists (includes Word Processing Operators)	61	16	23
• Bookkeepers and Accounting Clerks	46	54	0
• Insurance Clerks	32	46	23
• EDP Equipment Operators	7	54	39
• Library File Clerks	53	16	32
• Claims Adjustors	0	23	77
• General Office Clerks	46	16	39
SALES			
• Supervisor of Sales	0	39	61
• Insurance Salesmen and Agents	0	68	32
OTHER OCCUPATIONS	0	8	92

Results of
Question 7

TABLE 12: INSURANCE AGENTS AND BROKERS

SIC 735

Steps Firms Will Likely Take to Deal With an OVERSUPPLY of Skills 1985-1995

Occupations	Most Commonly Cited	Second Most Common	Third Most Common
MANAGERIAL, ADMINISTRATIVE AND RELATED			
• Financial Management	Attrition	Retrain	(1)
• Financial Officers	Attrition	Retrain	(1)
• All Other Managerial	Attrition	Retrain	(1)
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS			
• Systems Analysts and Computer Programmers	Attrition	Upgrade	Relocate
CLERICAL			
• Secretaries	Attrition	Retrain	Upgrade
• Typists/Clerk Typists (includes Word Processing Operators)	Attrition	Upgrade	Retrain
• Bookkeepers and Accounting Clerks	Attrition	Lateral Transfer	Retrain
• Insurance Clerks	Attrition	Lateral Transfer	(1)
• EDP Equipment Operators	Attrition	Retrain	(1)
• Library File Clerks	Attrition	Shorter Hours	Upgrade
• General Office Clerks	Attrition	Layoff	Retrain

(1) Only two steps mentioned.

Results of Question 8

TABLE 13: INSURANCE AGENTS AND BROKERS

SIC 735

Steps Firms Will Likely Take to Deal With a SHORTAGE of Skills 1985-1995

Occupations	Most Commonly Cited	Second Most Common	Third Most Common
MANAGERIAL, ADMINISTRATIVE AND RELATED			
• Financial Management	Upgrade	Retrain	Recruit
• Financial Officers	Upgrade	Retrain	Recruit
• All Other Managerial	Upgrade	Recruit	(1)
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS			
• Systems Analysts and Computer Programmers	Recruit	Contract Out	Upgrade
CLERICAL			
• Secretaries	Recruit	(2)	(2)
• Typists/Clerk Typists (includes Word Processing Operators)	Recruit	(2)	(2)
• Bookkeepers and Accounting Clerks	Recruit	Retrain	(1)
• Insurance Clerks	Recruit	Retrain	(1)
• EDP Equipment Operators	Recruit	Upgrade	(1)
• Library File Clerks	Recruit	(2)	(2)
• Claims Adjustors	Recruit	Upgrade	(1)
• General Office Clerks	Recruit	(2)	(2)
SALES			
• Supervisor of Sales	Upgrade	Retrain	Recruit
• Insurance Salesmen and Agents	Recruit	Upgrade	(1)
OTHER OCCUPATIONS	Upgrade	Retrain	Recruit

(1) Only two steps mentioned.
(2) Only one step mentioned.

The ranking of these steps by occupation is outlined in Table 12.

5.3 Likely Steps to Deal with Skills Shortages

The most commonly cited steps for dealing with shortages of skills which may develop are recruitment of employees and upgrading the skills of current employees. See Table 13.

In the Managerial, Administrative and Related occupations, upgrading of employees was the most commonly cited step to deal with shortages. In Clerical and Sales occupations, recruiting was the most common response.

5.4 Technology Impact on Skill Levels and Job Content

Respondents were asked to judge the expected impact of new technology on selected occupations in terms of:

- skills required,
- time required to achieve proficiency, and
- knowledge of their firms' operations.

Respondents indicated that they expect skill requirements to increase across most occupations. (See Table 14.)

Respondents expect that more time will be required to achieve proficiency in Management and Sales occupations; however, respondents were more divided in their opinions on this question than on the question of skill requirements.

Similarly, respondents expect that more knowledge will be required of firm's operations in Managerial and Sales occupations. There was less consensus about the need for this knowledge in the Clerical occupations.

Results of Question 9

TABLE 14: INSURANCE AGENTS AND BROKERS SIC 735

Impact of Technology on Skill Levels and Job Content

Occupations	Percent of Firms (1)								
	Skills Required			Time to Achieve Proficiency			Knowledge of Firm's Operations		
	+	-	0	+	-	0	+	-	0
MANAGERIAL, ADMINISTRATIVE AND RELATED									
• Financial Management	100	0	0	61	7	32	68	0	32
• Financial Officers	100	0	0	59	7	34	66	0	34
• All Other Managerial	100	0	0	37	11	51	74	0	26
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS									
• Systems Analysts and Computer Programmers	30	20	50	9	20	71	39	0	61
CLERICAL									
• Secretaries	83	8	8	27	8	65	46	8	46
• Typists/Clerk Typists (includes Word Processing Operators)	75	8	17	19	8	73	38	8	54
• Bookkeepers and Accounting Clerks	86	0	14	39	16	46	39	16	46
• Insurance Clerks	93	0	7	46	0	54	61	16	23
• EDP Equipment Operators	54	19	27	17	19	65	46	0	54
• Library File Clerks	65	27	8	27	27	46	56	10	33
• Claims Adjustors	85	0	15	15	0	85	50	0	50
• General Office Clerks	65	27	8	27	27	46	46	27	27
SALES									
• Supervisor of Sales	100	0	0	80	0	21	80	0	21
• Insurance Salesmen and Agents	84	0	16	61	7	32	53	0	48
OTHER OCCUPATIONS	100	0	0	100	0	0	100	0	0

+ increase - decrease 0 remain the same

(1) Non-responses excluded.

5.5 Training Costs and New Technology

Insurance agents and brokers estimate that they currently spend about 1.5 to 2.0 percent of their total labour costs on training. This proportion is expected to increase to 2.5 to 3.0 percent by 1995. Training costs related to new technology is not expected to increase from about 35 percent experienced today.

6.0 Labour Relations Environment

This chapter discusses the labour relations environment in the industry.

6.1 Industrial Relations Environment: Historical

The Insurance Agents and Brokers Industry has less than 1 percent of its employees unionized.

6.2 Nature of Worker Involvement in the Process of Technological Change

Firms were asked whether they had a formal mechanism for worker participation in setting production and/or sales targets, improving productivity and/or quality and adopting new technology.

80 percent of the small firms and 100 percent of the medium firms have formal mechanisms for setting production and sales targets.

75 percent of small firms and all medium firms have formal agreements for improving productivity and quality, but only 50 percent of the small firms and all the medium firms have a formal means of gaining workers' participation in adopting new technology.

6.3 Views on Involving Workers in Decisions on Adopting New Technology

Management and union leaders were asked to what extent and how should management involve workers in decisions regarding the adoption of new technologies.

All the medium firms expressed the need for full worker involvement in the process of adopting new technology; however, small firms differ as to the proper extent and nature of involvement. Only 33 percent favour prior consultation with respect to the decision to introduce new technology, and 33 percent of the small firms believe that workers should have no involvement at all. The remaining 33 percent favour explaining the need for technological change as it occurs.

7.0 Planning for Technological Change

This chapter reports survey results regarding questions related to planning for technological change. A summary of these results appears in Table 15.

The survey indicates that only 46 percent of the industry makes use of strategic planning techniques. However, 61 percent have a human resource plan with a planning horizon of 5 years and 42 percent have a capital investment plan. These two plans are moderately well integrated, where they exist. Generally the smaller firms are less well established in planning for new technology, but the level of integration is the same for both the small and medium firms.

Results of
Question 18

SIC 735

TABLE 15: INSURANCE AGENTS AND BROKERS

Planning for Technological Change

Firms by Employment Size	Strategic Plan	Human Resource Plan		Capital Investment Plan		Perceived Integration Between Capital and Human Plans (1)
	Percent of Firms With Plan	Percent of Firms With Plan	Length of Planning Horizon	Percent of Firms With Plan	Length of Planning Horizon	
Small (50-199)	40	60	5 years	40	6 years	3.0
Medium (200-999)	67	67	5 years	50	4 years	3.0
Total Firms	46	61	5 years	42	5 years	3.0

(1) Using a scale of 1 to 5; 1 represents "Not at all integrated" and 5 "Highly integrated".

PART IV - APPENDICES

Part IV of this report presents the appendices referred to in Parts I and II.

These appendices are:

Appendix	Title	Reference
A	Firm Employment Size Categories Used in the Survey of the Insurance Agents and Brokers	Part I
B	Questionnaire	Part I
	Responses by Question	Part III
	• Life Insurance	
	• General Insurance	
	• Insurance Agents and Brokers	
C	Reliability of the Sample	Part I
D	Historical Tables	Part II
	• Life Insurance	page D.1
	• General Insurance	page D.13
	• Insurance Agents and Brokers	page D.16

APPENDIX A

FIRM EMPLOYMENT SIZE CATEGORIES USED IN THE SURVEY OF THE INSURANCE INDUSTRY

APPENDIX A

FIRM EMPLOYMENT SIZE CATEGORIES USED IN THE SURVEY OF THE INSURANCE INDUSTRY

Size Categories Used to Stratify the Sample Frame	Size Categories Used to Weight and Report Survey Results
Number of Employees	Number of Employees
50 - 99	Small 50 - 199
100 - 199	
200 - 499	Medium 200 - 999
500 - 999	
1000 - 1499	Large 1,000 or more
1500 - 2499	
2500 - 4999	
5000 or more	

APPENDIX B

QUESTIONNAIRES

AND

RESPONSES BY QUESTION

ONTARIO TASK FORCE ON EMPLOYMENT AND NEW TECHNOLOGY

LIFE INSURANCE
(SIC 721)
QUESTIONNAIRE

Currie, Coopers
& Lybrand

[illegible]

INTRODUCTION

Thank you for agreeing to participate in the study. It is being carried out for the Ontario Task Force on Employment and New Technology, a joint labour-management group. Their mandate is to examine the extent and nature of employment change likely to result from the introduction and application of new technology in Ontario over the next ten years.

You Will Receive The Survey Results

As a participant, you will receive a report on the survey results for your industry.

All Responses Will Be Confidential

All responses will be held in strictest confidence. Responses will be analysed and used only at an industry-wide level.

Both Organized Labour and Management Are Being Surveyed

Management and organized labour participants, in the case of unionized firms, will both receive a questionnaire. We realise that labour participants may not be able to answer some of the questions. In particular, they may find difficulty in answering questions: 10, 11, 12, 13 and 17.

Participants May Want to Consult Key Resource People in Responding

The questionnaire is not necessarily meant to be completed by only one respondent. It may be appropriate and even desirable for survey participants to consult other key resource people in their firm before responding to the questionnaire. Respondents should indicate on the Participant Information (p.4), the "principle respondent" and "other respondents" as well as the section(s) of the questionnaire to which they contributed.

You Will Save Time if Information is Filled in Before the Interview

A number of questions relate to your firm's past or present workforce and future plans. We are requesting management respondents to provide accurate information from their organization's records in advance of the interview. This step will reduce the time needed for the actual interview and also make it more meaningful. The Participant Information (p.4) and the following questions should be filled in prior to the management interview: 3, 6 to 13 inclusive, 15 and 17.

Group Interviews Are Possible

In some cases the principle respondent may want to arrange a group interview between himself, key resource people and our consultant. We would welcome such an arrangement. This option is open to either management or labour participants.

You May Wish to Complete the Entire Questionnaire Before the Interview

The entire questionnaire could be completed in advance of the interview. If this is convenient, please do so. We would, however, still wish to spend a half-hour with you to review your responses.

Your "Best" Estimate

Where estimates are required, we are asking respondents to provide us with their "best estimate". Estimating future trends is difficult. Our premise is that an expert inside the organization is in the best position to make them, based on his or her knowledge of the firm's future direction.

EXHIBIT A

SELECTED OCCUPATIONS: INSURANCE SIC 721, 735

MANAGERIAL, ADMINISTRATIVE & RELATED

Financial Management (e.g., Branch Manager, Regional Manager, Manager Underwriting).
Financial Officers (e.g., Investment Analysts, Accountants, Auditors, Head Office Underwriter).
All Other Managers & Administrators (not listed above - includes all other senior and middle management and administrative support functions such as personnel officers).

NATURAL SCIENCE, ENGINEERING & MATHEMATICS

Systems Analysts & Computer Operators

CLERICAL

Secretaries
Typists/Clerk Typists (includes Word Processing Operators).
Bookkeeping & Accounting Clerks
Insurance Clerks (e.g., Actuarial, Claim, Insurance Checker, Reinsurance, Superannuation, Policy Change).
EDP Equipment Operators
File Clerks
Claim Adjusters
General Office Clerks

SALES

Supervisors: Sales (e.g., Supervisor, Life Insurance, Salesmen).
Insurance Salesmen and Agents

The Study is Focusing on Selected Occupations

The Task Force for your industry is focusing on chosen major occupational groups and selected occupations within these major groups. These are listed in Exhibit A. The job titles and definitions being used are from the "Canadian Classification and Dictionary of Occupations, 1971" (CCDO). The CCDO is a universal system of job titles and descriptions. Our consultants are available to assist you or your staff in clarifying which of your firm's positions should be considered in the CCDO titles listed in Exhibit A.

Please Call If You Have Any Enquiries

Should you or your staff require any assistance, please call Sandra Skivsky of our firm or the consultant who will be interviewing you, at 366-1921.

Your Participation Is Appreciated

While we appreciate that your participation in the survey puts a demand on your time and organization, we would emphasize that your contribution will have an important impact on the results of this project.

PARTICIPANT INFORMATION

COMPANY NAME:
UNION NAME (If appropriate):
AFFILIATED ORGANIZATIONS:
MAIN ADDRESS:
TELEPHONE NUMBER: ( )

BRIEF DESCRIPTION OF OPERATION IN ONTARIO

Divisions/Branches/Affiliates	Products/Services

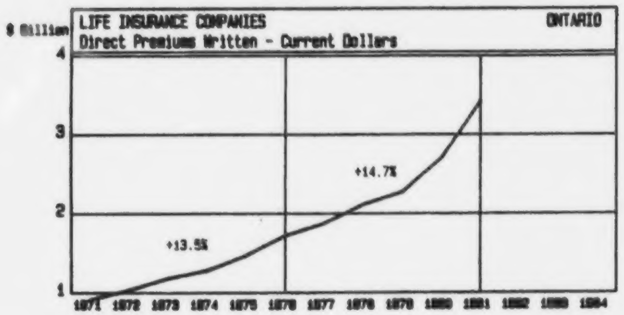
SURVEY PARTICIPANTS

		Number of Years		Check (✓) Sections Answered					
Names	Position	With Company	With Industry	II	III	IV	V	VI	VII
(principal respondent)				☐	☐	☐	☐	☐	☐
(other respondents)				☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐

SIC 721 L

CHART 1

INDUSTRY-WIDE PREMIUMS IN ONTARIO*



* **Source:** Annual Reports of the Superintendent of Insurance for Ontario and estimates by the Canadian Life and Health Association Inc.

SIC 721 L

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1. INDUSTRY-WIDE LIFE INSURANCE COMPANIES DIRECT PREMIUMS WRITTEN IN **ONTARIO**

Chart 1, opposite, illustrates the premiums written for Life Insurance Companies in **ONTARIO** in current dollars.

The rates shown for the first two time periods listed below are expressed in annual compound rates of change, in current dollars.

Using these rates as a guide, please **estimate** the annual compound rates of change, in current dollars, of your industry in **ONTARIO** for the next six periods listed.

Premiums in Ontario	Annual Compound Rate of Change (in current dollars)
1971 to 1976	+13.5 %
1976 to 1981	+14.7 %
Premiums in Ontario	Your Estimates (Indicate if + or -)
1981 to 1982?	___ %
1982 to 1983?	___ %
1983 to 1984?	___ %
1984 to 1985?	___ %
1985 to 1990?	___ %
1990 to 1995?	___ %

SIC 721 L

2. INDUSTRY-WIDE OUTLOOK - EMPLOYMENT IN ONTARIO

The table below indicates total employment and annual compound rates of change for employment in Life Insurance Companies in ONTARIO between 1971 and 1983. (Source: Annual Reports of the Superintendent of Insurance for Ontario and estimates by the Canadian Life and Health Association Inc.)

Would you please indicate your estimates for the four following periods listed below (i.e., 1984-1995). Provide your estimates in actual numbers or in annual compound rates of change, whichever is easier.

For your information, total employment covers full-time, part-time, temporary, casual and contract - i.e., total "head count".

Total Employment in Ontario		Annual Compound Rates of Change	
1971	24,520		
1981	32,110	1971-1981	+2.7 %
1982	32,160	1981-1982	+0.2 %
1983	31,200	1982-1983	-3.0 %

Your Estimates:

				(Indicate if + or -)
1984?	______	OR	1983-1984?	___ %
1985?	______	OR	1984-1985?	___ %
1990?	______	OR	1985-1990?	___ %
1995?	______	OR	1990-1995?	___ %

3. FIRM'S ADOPTION OF TECHNOLOGIES

The following questions refer to new technologies your firm has already or may adopt over the next ten years in ONTARIO.

3a. Please indicate the technologies that have already been adopted by your firm. Record your answer on Chart 3, opposite, under column 3a.

3b. Please indicate the technologies that will probably be adopted by your firm between 1985 and 1990. Record your answer on Chart 3, under column 3b. It may be appropriate to check more than one time period.

3c. Please indicate the technologies that will probably be adopted by your firm between 1991 and 1995. Record your answer on Chart 3, under column 3c. It may be appropriate to check more than one time period.

CHART 3

TECHNOLOGIES ADOPTED OR TO BE ADOPTED BY THE FIRM

	3a ADOPTED IN 1984 OR BEFORE	3b WILL BE ADOPTED BETWEEN 1985-1990?	3c WILL BE ADOPTED BETWEEN 1991-1995?
1. CUSTOMER SALES & SERVICE TECHNOLOGIES			
On-Line Policy Data Bases	☐	☐	☐
Computerized Insurance Needs Analysis	☐	☐	☐
Computerized Contract Generation	☐	☐	☐
Electronic Claims Processing System	☐	☐	☐
Automatic Insurance Verification	☐	☐	☐
Computerized Rating/Underwriting	☐	☐	☐
Brokerage Management System	☐	☐	☐
On-Line Terminal for Group Insurance Customers	☐	☐	☐
Any Others? ______________	☐	☐	☐
______________	☐	☐	☐
2. OFFICE AUTOMATION TECHNOLOGIES			
Word Processing	☐	☐	☐
Microcomputers	☐	☐	☐
Electronic Filing	☐	☐	☐
Internal Data Base Management Systems	☐	☐	☐
Local Area Networks (LANs)	☐	☐	☐
4th Generation Computer Languages	☐	☐	☐
Computerized Decision Support Systems	☐	☐	☐
Voice Activated Computers	☐	☐	☐
Artificial Intelligence/Expert Systems	☐	☐	☐
Fully Integrated Work Stations	☐	☐	☐
Any Others? ______________	☐	☐	☐
______________	☐	☐	☐
3. TELECOMMUNICATIONS TECHNOLOGIES			
Private Automated Branch Exchange (PABX)	☐	☐	☐
Electronic Mail	☐	☐	☐
Voice Mail	☐	☐	☐
Facsimile with Built-in Microprocessor (FAX)	☐	☐	☐
Satellite/Microwave Systems	☐	☐	☐
Video Conferencing	☐	☐	☐
Fibre Optics	☐	☐	☐
Any Others ? ______________	☐	☐	☐
______________	☐	☐	☐
HAVE/WILL NOT ADOPT ANY NEW TECHNOLOGIES IN THIS PERIOD	☐	☐	☐

4. FORCES DRIVING THE FIRM'S NEED FOR NEW TECHNOLOGIES OVER THE NEXT 10 YEARS

4a. What is the **single most important driving factor** in your firm's internal or external environment which could accelerate your firm's **need to adopt** these new technologies over the next 10 years in ONTARIO?

4b. What is the **second most important** factor likely to accelerate your firm's need to adopt these new technologies?

4c. And what is the **third most important** factor?

5. FACTORS AFFECTING THE FIRM'S RATE OF TECHNOLOGY ADOPTION OVER THE NEXT 10 YEARS

5a. What is the **single most important** factor in your firm's internal or external environment that could slow down the speed at which your firm will adopt these new technologies over the next 10 years in ONTARIO?

5b. What is the **second most important** factor that could slow down your firm's adoption of these new technologies?

5c. And what is the **third most** important factor?

6. IMPACT OF TECHNOLOGY ON OCCUPATIONS OVER THE NEXT 10 YEARS

The following questions attempt to determine impacts on specific occupations you expect to be caused by the adoption of new technologies in your firm over the next 10 years in ONTARIO.

6a. Please indicate the **occupations** in which your firm is likely to have an **oversupply of people** over the next 10 years as a result of the adoption of these new technologies. Record your answer on Chart 6, opposite, under column 6a.

6b. Please indicate the **occupations** in which you expect your firm will have **a shortage of the skills** required to cope with these new technologies. Record your answer on Chart 6, under column 6b.

CHART 6

IMPACT OF TECHNOLOGIES ON SELECTED OCCUPATIONS IN YOUR FIRM OVER THE NEXT 10 YEARS

	6a OCCUPATIONS WITH AN OVERSUPPLY OF SKILLS	6b OCCUPATIONS WITH A SHORTAGE OF THE REQUIRED SKILLS
MANAGERIAL, ADMINISTRATIVE & RELATED		
• Financial Management	☐	☐
• Financial Officers	☐	☐
• All Other Managers & Administrators (not listed above)	☐	☐
NATURAL SCIENCE, ENGINEERING & MATHEMATICS		
• Systems Analysts & Computer Operators	☐	☐
CLERICAL		
• Secretaries	☐	☐
• Typists/Clerk Typists	☐	☐
• Bookkeeping & Accounting Clerks	☐	☐
• Insurance Clerks	☐	☐
• EDP Equipment Operators	☐	☐
• File Clerks	☐	☐
• Claim Adjusters	☐	☐
• General Office Clerks	☐	☐
SALES		
• Supervisors: Sales	☐	☐
• Insurance Salesmen and Agents	☐	☐
ANY OTHER OCCUPATIONS SIGNIFICANTLY AFFECTED? WHICH ONES?		
______________________	☐	☐
______________________	☐	☐
______________________	☐	☐

7. ACTIONS TO DEAL WITH OVERSUPPLY OF SKILLS IN FIRM OVER NEXT 10 YEARS

The following questions relate to the actions your firm will likely take to deal with the oversupply of people in your firm resulting from the adoption of these new technologies in ONTARIO.

7a. For each occupation with a potential oversupply of skills (as you indicated in Q.6a), please identify the steps your firm will likely take that will affect the largest number of people in that occupation. Record your answers on Chart 7, opposite, under column 7a.

In answering this and the following question, please consider the possible actions listed below as well as any other possible action not in the list but that your firm is likely to take.

Possible Actions

- Attrition
- Early Retirement
- Layoffs
- Relocation (geographic)
- Shorter hours/work week
- Job sharing
- Change from full-time to part-time
- Retraining
- Lateral transfer
- Upgrading
- Downgrading
- Etc., etc.

7b. Again, for each of these occupations, identify the step your firm may take that will affect the second largest number of people in that occupation. Record on Chart 7, under column 7b.

CHART 7

STEPS FIRM WILL LIKELY TAKE
TO DEAL WITH OVERSUPPLY OF SKILLS OVER NEXT 10 YEARS

OCCUPATIONS	7a STEPS THAT WILL AFFECT THE LARGEST NUMBER OF PEOPLE IN THIS OCCUPATION	7b STEPS THAT WILL AFFECT THE 2ND LARGEST NUMBER OF PEOPLE IN THIS OCCUPATION
MANAGERIAL, ADMINISTRATIVE & RELATED		
• Financial Management		
• Financial Officers		
• All Other Managers & Administrators (not listed above)		
NATURAL SCIENCE, ENGINEERING & MATHEMATICS		
• Systems Analysts & Computer Operators		
CLERICAL		
• Secretaries		
• Typists/Clerk Typists		
• Bookkeeping & Accounting Clerks		
• Insurance Clerks		
• EDP Equipment Operators		
• File Clerks		
• Claim Adjusters		
• General Office Clerks		
SALES		
• Supervisors: Sales		
• Insurance Salesmen and Agents		
ANY OTHER OCCUPATIONS SIGNIFICANTLY AFFECTED? WHICH ONES?		

8. STEPS TO ACQUIRE THE NEW SKILL REQUIREMENTS OVER THE NEXT 10 YEARS

The following questions are intended to identify the most likely steps your firm may take to acquire the new skill requirements associated with the new technologies over the next 10 years in ONTARIO.

8a. Please indicate, for each occupation with a potential shortage of the new skill requirements (as you indicated in Q6b), the step your firm will likely take that will **affect the largest number of people** in that occupation. Record your answers on Chart 8, column 8a.

Please consider the possible actions listed below as well as any other action (not listed) that your firm is likely to take.

Likely Steps

- Retraining
- Relocation
- Upgrading
- Increased overtime of firm's skilled people
- Recruiting full-time skilled people
- Recruiting part-time skilled people
- Contracting work out
- Etc., etc.

8b. Please indicate, for each occupation, the step your firm may take that will affect the **second largest number of people** in that occupation. Record your answers in column 8b.

CHART 8

STEPS FIRM WILL TAKE
OVER NEXT 10 YEARS TO ACQUIRE THE NEW SKILL REQUIREMENTS

OCCUPATIONS	8a STEP WHICH WILL AFFECT THE LARGEST NUMBER OF PEOPLE IN THIS OCCUPATION	8b STEP WHICH WILL AFFECT THE 2ND LARGEST NUMBER OF PEOPLE IN THIS OCCUPATION
MANAGERIAL, ADMINISTRATIVE & RELATED		
• Financial Management		
• Financial Officers		
• All Other Managers & Administrators (not listed above)		
NATURAL SCIENCES, ENGINEERING & MATHEMATICS		
• Systems Analysts & Computer Operators		
CLERICAL		
• Secretaries		
• Typists/Clerk Typists		
• Bookkeeping & Accounting Clerks		
• Insurance Clerks		
• EDP Equipment Operators		
• File Clerks		
• Claim Adjusters		
• General Office Clerks		
SALES		
• Supervisors: Sales		
• Insurance Salesmen and Agents		
ANY OTHER OCCUPATIONS SIGNIFICANTLY AFFECTED? WHICH ONES?		

9. NATURE OF IMPACT ON SKILLS AND JOB CONTENT OVER THE NEXT TEN YEARS

The following questions are meant to identify the nature of the impact on selected occupations in ONTARIO.

9a. For selected occupations in your firm, please indicate how the new technologies will affect each in their daily work. That is, will their daily work require greater skill (+), less skill (-), or about the same skill (0) as they currently require. Record your answers on Chart 9, opposite, under Column 9a.

9b. Please indicate whether the new skills they require will demand more time (+), less time (-), or about the same time (0) to achieve the proficiency that they will need. Record your answers on Chart 9, column 9b.

9c. Please indicate whether, in using these new technologies, these occupations will require more knowledge (+) of the company's operations, less knowledge (-), or about the same (0) amount of knowledge as is currently required to perform their daily tasks. Record your answers on Chart 9, under 9c.

CHART 9

IMPACT OF TECHNOLOGY ON SKILL LEVELS AND JOB CONTENT

	9a SKILLS REQUIRED (+, -, 0)	9b TIME TO ACHIEVE PROFICIENCY (+, -, 0)	9c KNOWLEDGE OF COMPANY'S OPERATIONS (+, -, 0)	COMMENTS
MANAGERIAL, ADMINISTRATIVE, & RELATED				
• Financial Management				
• Financial Officers				
• All Other Managers & Administrators (not listed above)				
NATURAL SCIENCE, ENGINEERING & MATHEMATICS				
• Systems Analysts & Computer Operators				
CLERICAL				
• Secretaries				
• Typists/Clerk Typists				
• Bookkeeping & Accounting Clerks				
• Insurance Clerks				
• EDP Equipment Operators				
• File Clerks				
• Claim Adjusters				
• General Office Clerks				
SALES				
• Supervisors: Sales				
• Insurance Salesmen & Agents				
ANY OTHER OCCUPATIONS SIGNIFICANTLY AFFECTED? WHICH ONES?				

10. TRAINING/RETRAINING

These questions are about the current and future importance of training and retraining in your organization.

10a. Please indicate what were your firm's total training costs as a percent of total labour costs in 1981. Record your answer on Chart 10, line 10a.

Training costs include the costs of internally or externally provided training programs, classroom and on-the-job workshops, vouchers or tuition credits, provided by your firm, which are intended to train employees to perform their jobs or to retrain employees to assume new or alternate jobs. Labour costs include all wages, salaries and benefits. (e.g., $\frac{\text{Total Training Costs}}{\text{Total Labour Costs}} \times 100 = 1.0\%$)

10b. Please indicate what your firm's total training costs as a percent of total labour costs will be in 1984 (to year end). Record your answer on line 10b.

10c. What do you estimate for 1985, (line 10c)?

10d. What do you estimate it will be in 1990, (line 10d)?

10e. What do you estimate it will be in 1995, (line 10e)?

10f. For each year on Chart 10, (line 10a to 10e), please indicate what percent of total training costs in each year have or will go towards training people to adapt to the new technologies.

CHART 10

TRAINING COSTS OF FIRM

			As a Percent of Total Labour Costs	Percent of Total Training Costs Directly Related to New Technologies
10a.	1981?	Actual	___%	___%
10b.	1984?	Estimate	___%	___%
10c.	1985?	Estimate	___%	___%
10d.	1990?	Estimate	___%	___%
10e.	1995?	Estimate	___%	___%

11. FIRM'S EMPLOYMENT TRENDS

In this section, we would like to determine how the firm's employment levels in ONTARIO are likely to change over the next 10 years.

11a. To begin, considering all possible factors in your firm's internal and external environment, what is the single most important factor which will have an impact on your firm's level of employment in ONTARIO over the next 10 years? ______________________________

____

11b. The second most important factor? ______________________________

____

11c. The third most important factor? ______________________________

____

11d. Please indicate total employees (includes full-time, temporary, contract, casual, seasonal and part-time employment) in your organization in ONTARIO for 1971, 1981 and 1984 from your employment records. Record your answers on Chart 11, column 11d.

Please estimate future total employment in your organization in ONTARIO for 1985, 1990 and 1995.

11e. Please indicate the percent of your total employment in ONTARIO that are part-time employees (i.e., less than normal full work week), for 1981 and 1984. Record your answers on Chart 11, column 11e.

Also in column 11e, please estimate part-time employees as a percent of total employees in ONTARIO for 1985, 1990 and 1995.

11f. Please translate your total ONTARIO employment (include full-time, part-time, casual, temporary, seasonal) into a full-time equivalent (F.T.E.) figure for your firm for 1981 and 1984 in column 11f.

Also in column 11f, please estimate total employment in terms of a full-time equivalent (F.T.E.) for 1985, 1990 and 1995.

By F.T.E. we mean a normal, full, work week for a normal, full year. F.T.E. can be measured in a variety of ways depending on whatever is normal for your firm or industry. For example, if expressed in hours of work per year one FTE might range from 1750 to 2000 hours of work a year depending on the length of the normal work week (e.g., 35 hours/week x 50 weeks = 1750 hours, 40 hours/week x 50 weeks = 2000 hours.)

CHART 11

FIRM'S EMPLOYMENT TRENDS IN ONTARIO

	11d TOTAL EMPLOYMENT IN ONTARIO	11e PART-TIME EMPLOYEES AS A % OF TOTAL EMPLOYMENT	11f TOTAL EMPLOYMENT IN FULL-TIME EQUIVALENT (F.T.E.)
Actual Figures			
1971?	______		
1981?	______	______ %	______ FTE
1984?	______	______ %	______ FTE
Your Estimates			
1985?	______	______ %	______ FTE
1990?	______	______ %	______ FTE
1995?	______	______ %	______ FTE

12. CHANGES IN EMPLOYMENT STRUCTURE

This section is intended to measure the changes in the employment structure of your firm in ONTARIO between 1981 and 1995.

12a. Please indicate the actual percentage share of each occupation listed as a percent of your firm's total employment in ONTARIO in 1981. Record your answer on Chart 12, column 12a.

12b. Please indicate the actual percentage share of each selected occupation listed as a percent of your firm's total employment in ONTARIO in 1984. Record your answer in column 12b.

12c. Please estimate the same for each selected occupation in 1985. Record in column 12c.

12d. Please estimate the same for each selected occupation in 1990. Record in column 12d.

12e. Please estimate the same for each selected occupation in 1995. Record in column 12e.

CHART 12

TRENDS IN FIRM'S OCCUPATIONAL STRUCTURE
BETWEEN 1981 AND 1995

	OCCUPATIONS AS A PERCENT OF TOTAL EMPLOYMENT OF THE FIRM IN ONTARIO					
	12a Actual 1981	12b Actual 1984	12c Estimate 1985	12d Estimate 1990	12e Estimate 1995	
	%	%	%	%	%	
MANAGERIAL, ADMINISTRATIVE, & RELATED	☐	☐	☐	☐	☐	1e
• Financial Management						
• Financial Officers						
• All Other Managers & Administrators (not listed above)						
NATURAL SCIENCES, ENGINEERING & MATHEMATICS	☐	☐	☐	☐	☐	2e
• Systems Analysts & Computer Operators						
• All Other Natural Science, Engineering & Mathematics (not listed above)						
CLERICAL	☐	☐	☐	☐	☐	3e
• Secretaries						
• Typists/Clerk Typists						
• Bookkeeping & Accounting Clerks						
• Insurance Clerks						
• EDP Equipment Operators						
• File Clerks						
• Claim Adjusters						
• General Office Clerks						
• All Other Clerks (not listed above)						
SALES	☐	☐	☐	☐	☐	4e
• Supervisors: Sales						
• Insurance Salesmen & Agents						
ALL OTHER OCCUPATIONS	☐	☐	☐	☐	☐	5e
* FIRM'S TOTAL EMPLOYMENT IN ONTARIO (1+2+3+4+5 = 100%)	100%	100%	100%	100%	100%	

13. EMPLOYMENT STRUCTURE BY SEX

The following questions refer to your firm's employment in ONTARIO by sex for each specific occupation listed in Chart 13.

13a. Please provide the percentage split between male and female of your employees in ONTARIO by each occupation in 1981. Record your answer on Chart 13, column 13a.

13b. Please provide the percentage split between male and female employees by occupation in ONTARIO in 1984. Record your answer in Column 13b.

CHART 13

EMPLOYMENT STRUCTURE BY SEX AND OCCUPATION IN ONTARIO

	13a 1981 EMPLOYMENT			13b 1984 EMPLOYMENT		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
MANAGERIAL, ADMINISTRATIVE & RELATED						
• Financial Management	___% +	___%	=100%	___% +	___%	=100%
• Financial Officers	___% +	___%	=100%	___% +	___%	=100%
• All Other Managers & Administrators (not listed above)	___% +	___%	=100%	___% +	___%	=100%
NATURAL SCIENCE, ENGINEERING & MATHEMATICS						
• Systems Analysts & Computer Operators	___% +	___%	=100%	___% +	___%	=100%
CLERICAL						
• Secretaries	___% +	___%	=100%	___% +	___%	=100%
• Typists/Clerk Typists	___% +	___%	=100%	___% +	___%	=100%
• Bookkeeping & Accounting Clerks	___% +	___%	=100%	___% +	___%	=100%
• Insurance Clerks	___% +	___%	=100%	___% +	___%	=100%
• EDP Equipment Operators	___% +	___%	=100%	___% +	___%	=100%
• File Clerks	___% +	___%	=100%	___% +	___%	=100%
• Claim Adjusters	___% +	___%	=100%	___% +	___%	=100%
• General Office Clerks	___% +	___%	=100%	___% +	___%	=100%
SALES						
• Supervisors: Sales	___% +	___%	=100%	___% +	___%	=100%
• Insurance Salesmen & Agents	___% +	___%	=100%	___% +	___%	=100%
FIRM'S TOTAL EMPLOYEES IN ONTARIO	___% +	___%	=100%	___% +	___%	=100%

14. ORGANIZED LABOUR IN YOUR FIRM IN ONTARIO

14a. Does your firm have any workers in ONTARIO covered by a collective labour agreement(s)?

Yes ☐ No ☐ If no, go on to Question 14c.

14b. If yes, what percent of your firm's total employment in ONTARIO is currently (1984) unionized?

____%

14c. What percent of your firm's total employment in ONTARIO do you estimate will be unionized by 1985, 1990 and by 1995?

- 1985? ____%
- 1990? ____%
- 1995? ____%

14d. If you expect an increase in the percent of total employment that will be unionized, please indicate the specific occupational groups within which you expect the increase will take place.

____

____

15. ORGANIZED LABOUR AND TECHNOLOGY CHANGE

If any of the employees in your firm in ONTARIO are represented by a union, please answer the following series of questions. If none of the workers in your firm in ONTARIO are unionized, please go on to Question 16, p. 22.

15a. Please indicate the name of the union(s) in your firm in ONTARIO. Record your answers on Chart 15, on line 15a.

15b. On line 15b, please indicate the number of the firm's employees in ONTARIO in each union.

15c. On line 15c, indicate the worker groups in your firm the union(s) represents.

15d. On line 15d, check ☑ if the contract(s) has a technology change clause(s).

15e. On line 15e, check ☑ if the technology change clause(s) covers any of the following:

- Notice/Disclosure
- Consultation/Participation
- Joint Technology Change Committee
- Job Security
- Seniority
- Other (please specify).

15f. On line 15f, indicate whether the clause(s) is effectively administered. If your answer is "NO", please explain your answer.

CHART 15

ORGANIZED LABOUR IN ONTARIO

15a. Name of Unions in Firm	(name of union)	(name of union)	(name of union)
15b. Number of Firm's Employees in Each Union			
15c. Worker Groups Represented by Each Union			
15d. Does Union(s) Contract(s) Have a Technology Change Clause(s)?			
YES	☐	☐	☐
NO	☐	☐	☐
15e. Check ☑ if Technology Change Clause(s) Includes:			
• Notice/Disclosure	☐	☐	☐
• Consultation/Participation	☐	☐	☐
• Joint Technology Change Committee	☐	☐	☐
• Job Security	☐	☐	☐
• Seniority	☐	☐	☐
• Other ____________ (specify)	☐	☐	☐
15f. Is the Clause Effectively Administered?			
YES	☐	☐	☐
NO	☐	☐	☐
If 'NO', explain			

SIC 721 L

15g. In general, what has been the union's position on the adoption of new technologies in your firm? Please explain.

____

____

____

____

____

SIC 721 L

16. THE NATURE OF WORKER INVOLVEMENT IN THE PROCESS OF TECHNOLOGY ADOPTION

The following questions are on the nature of the relationship between workers and management in your firm as decisions are made on the adoption of new technology.

16a. Does your firm have a formal mechanism for worker participation in any of the following? Please Check ☑ Yes or No

	YES	NO
• Setting production and/or sales targets:		
- at company level?	☐	☐
- at division/plant level?	☐	☐
- at department/area level?	☐	☐
- at working group level?	☐	☐
• Improving productivity/quality?	☐	☐
• Adoption of new technology?	☐	☐

16b. In your opinion, to what extent and how should management involve workers in decisions regarding the adoption of new technologies? Please comment.

17. FUTURE CAPITAL INVESTMENTS

17a. Please indicate how much, **in today's dollars**, your firm plans to spend on **construction of structures and buildings** in ONTARIO over the period 1985 to 1990 and over the period 1991 to 1995. Record your answer on Chart 17, column 17a.

17b. What percent of this spending can be directly attributed to the adoption of **new technologies**? Record under column 17b.

17c. Would you indicate how much, **in today's dollars**, your firm plans to spend on **machinery and equipment** over the period 1985 to 1990 and over the period 1991 to 1995 in ONTARIO. Record under column 17c.

17d. What percent of this spending on **machinery and equipment** will be for **new technologies**? Record under column 17d.

17e. Please indicate what criterion your firm will likely use to justify the financial investment in the new technologies.

Pay-back period ☐ ______________ If Yes, how long?

Return on investment ☐ ______________ If Yes, what rate?

Other ______ (specify) ☐ ______________ Please elaborate

17f. Considering now your total capital investment in new technology over the next 10 years, what percent will be funded through internal funds and what percent will be funded through external funds?

Internal funds ___%
External funds ___%
100%

CHART 17

CAPITAL INVESTMENT PLANS
IN ONTARIO

	INVESTMENT IN STRUCTURES & BUILDINGS		INVESTMENT IN MACHINERY & EQUIPMENT	
	17a	17b	17c	17d
	IN TODAY'S DOLLARS (In Thousands $)	% DIRECTLY RELATED TO NEW TECHNOLOGY	IN TODAY'S DOLLARS (In Thousands $)	% FOR NEW TECHNOLOGY
1985 to 1990?	$______	______%	$______	______%
1991 to 1995?	$______	______%	$______	______%

18. PLANNING FOR CHANGES IN TECHNOLOGY

These questions ask about your firm's plans for adopting new technologies in ONTARIO.

18a. Does your firm currently have a long-term strategic plan?

Yes ☐ No ☐

18b. Does your firm have a plan to deal with future human resource needs?

Yes ☐ No ☐ If no, go to Question 18d.

18c. Up to what year has your firm planned for its human resource needs?

(WRITE IN YEAR)

18d. Does your firm have a capital investment plan dealing with the adoption of new technologies?

Yes ☐ No ☐ If no, go to Question 19. on p. 25.

18e. Up to what year has your firm planned for its capital requirements?

(WRITE IN YEAR)

18f. On a scale of 1 to 5, please indicate to what extent these two plans (capital investment and human resource plans) are integrated.

(Please circle answer)

NOT AT ALL INTEGRATED 1 2 3 4 5 HIGHLY INTEGRATED

19. Please indicate below any other comments on the issue of employment and new technology you wish to make.

THANK YOU FOR YOUR PARTICIPATION

LIFE INSURANCE

Number of Firms and Unions Responding by Question

Question		Firms
Question 1	1982-1983	5
	1983-1984	5
	1984-1985	5
	1985-1990	5
	1990-1995	5
Question 2		*
Question 3	a,b,c	6
Question 4	a,b,c	6
Question 5	a,b,c	6
Question 6	a,b	4
Question 7	a	4
	b	3
Question 8	a	4
	b	4
Question 9	a	6
	b	6
	c	6
Question 10	a,b,c,d,e	5
Question 11	a,b,c,	5
	d	5
	e	5
	f	5

Question		Firms
Question 12	a,b,c,d,e	5
Question 13		*
Question 14	a	6
	b	0
	c	6
	d	0
Question 15	a	0
	b	0
	c	*
	d	0
	e	0
	f	0
	g	0
Question 16	a	5
	b	6
Question 17	a	5
	b	5
	c	5
	d	5
	e	4
	f	3
Question 18	a	6
	b	6
	c	2
	d	6
	e	1
	f	3

*** Data not used and therefore, number of responses not reported.**

GENERAL INSURANCE

Number of Firms and Unions Responding by Question

Question		Firms
Question 1	1982-1983	8
	1983-1984	8
	1984-1985	8
	1985-1990	8
	1990-1995	8
Question 2		*
Question 3	a,b,c	8
Question 4	a,b,c	8
Question 5	a,b,c	8
Question 6	a,b	8
Question 7	a	7
	b	7
Question 8	a	6
	b	7
Question 9	a	8
	b	8
	c	8
Question 10	a,b,c,d,e	9
Question 11	a,b,c,	7
	d	9
	e	9
	f	9
Question 12	a,b,c,d,e	9
Question 13		*
Question 14	a	8
	b	0
	c	8
	d	2
Question 15	a	0
	b	0
	c	*
	d	0
	e	0
	f	0
	g	0
Question 16	a	8
	b	7
Question 17	a	8
	b	8
	c	8
	d	8
	e	8
	f	7
Question 18	a	8
	b	8
	c	6
	d	8
	e	5
	f	5

* Data not used and therefore, number of responses not reported.

INSURANCE BROKERS AND AGENTS

Number of Firms and Unions Responding by Question

Question		Firms
Question 1	1982-1983	8
	1983-1984	8
	1984-1985	8
	1985-1990	8
	1990-1995	8
Question 2		*
Question 3	a,b,c	8
Question 4	a,b,c	8
Question 5	a,b,c	8
Question 6	a,b	8
Question 7	a	6
	b	4
Question 8	a	8
	b	5
Question 9	a	8
	b	8
	c	8
Question 10	a,b,c,d,e	8
Question 11	a,b,c,	8
	d	8
	e	8
	f	7

Question		Firms
Question 12	a,b,c,d,e	8
Question 13		*
Question 14	a	8
	b	1
	c	7
	d	0
Question 15	a	0
	b	0
	c	*
	d	0
	e	0
	f	0
	g	0
Question 16	a	6
	b	4
Question 17	a	8
	b	8
	c	8
	d	8
	e	8
	f	8
Question 18	a	8
	b	8
	c	5
	d	7
	e	4
	f	4

* Data not used and therefore, number of responses not reported.

RELIABILITY OF THE SAMPLE

SAMPLE RELIABILITY

The sample reliability is summarized with other sample and population characteristics in "Table 1". The sample was selected as a three stage stratified random sample. The purpose of this stratification was to reduce the error variance in the measurement of organization size by increasing the homogeneity of each group of organizations within each strata.

The first stage consisted in creating two industry sectors (i.e. manufacturing and services). The second stage involved dividing up each industry sector into nine and fourteen industrial sub-classes respectively and according to Standard Industrial Classification codes (see Table 1). The third stage was to further stratify each SIC into three more homogeneous size groups:

	Manufacturing Sector	Service Sector
Small	20- 99 employees	20-199 employees
Medium	100-499 employees	200-999 employees
Large	500+ employees	1,000+ employees

Exceptions to these three size groupings are as follows:

SECTOR		ORGANIZATION SIZE EXCLUSION
Manufacturing Sector		
291	Iron & Steel Mills	less than 500
321	Aircraft & Aircraft Parts	less than 50
Service Sector		
701	Banks and Trusts	less than 50
721	General and Life Insurance	less than 50
735	Insurance Brokers	less than 50
909	Federal Government	less than 500
931	Provincial Government	less than 200
951	Local Government	less than 500

Overall, the sample yields a relatively high reliability level in reflecting the employment level of those sectors surveyed. For instance, the sample for Life Insurance yields a minimum confidence level of about 95 percent with an associated allowable error of 5 percent. That is, we would expect that the estimated employment level for the sector has a 95 percent chance of being within ± 5 percent of the actual employment level found in the frame. Or stated alternatively, if 100 independent random samples were drawn, in 95 of these samples we would expect to have an estimated employment level within ± 5 percent of the actual employment level found in the sample frame.

The sample for General Insurance yields a minimum confidence level of about 95 percent with an associated allowable error of 9 percent. That is, we would expect that the estimated employment level for the sector has a 95 percent chance of being within ± 9 percent of the actual employment level found in the frame. Or stated alternatively, if 100 independent random samples were drawn, in 95 of these samples we would expect to have an estimated employment level within ± 9 percent of the actual employment level found in the sample frame.

The sample for Insurance Brokers yields a minimum confidence level of about 90 percent with an associated allowable error of 11 percent. That is, we would expect that the estimated employment level for the sector has a 90 percent chance of being within ± 11 percent of the actual employment level found in the frame. Or stated alternatively, if 100 independent random samples were drawn, in 90 of these samples we would expect to have an estimated employment level within ± 11 percent of the actual employment level found in the sample frame.

TABLE 1: SUMMARY - SELECTED SERVICE INDUSTRIES

SAMPLE FRAME AND SAMPLE

		UNIVERSE		SAMPLE FRAME				SAMPLE				
SIC	SIC NAME	Number of Firms	Number of Employees	Firm Size Cut Off	Number of Firms	Number of Employees	Share of Universe	Number of Firms	Number of Unions	Number of Employees	Reliability Level (min.) (Percent)	Allowable Error (Percent)
701	Chartered Banks	68	64,200	50	16	60,300	94	8		43,883	95	5
701	Trust Companies	41	20,000	50	22	19,000	95	6		8,466	90	15
721	Life Insurance	45	31,200	$10 MM	26	28,200	90	6		6,355	95	5
721	General Insurance	94	20,000	$10 MM	51	19,000	95	8		2,128	95	9
735	Insurance Brokers	2,737	31,600	50	45	6,300	20	8		1,213	90	11
909	Federal Government	67	91,000	500	22	69,000	76	8	2	28,350	90	11
931	Provincial Government	37	84,000	200	19	67,000	80	8		37,599	90	11
951	Local Government	837	107,474	500	39	83,782	78	10	7	23,832	90	13
544	Telephone Systems and Interconnects	111	30,423	20	37	29,430	97	8	1	26,444	90	23
545	Telegraph and Cable Systems	4	2,543	20	4	2,543	100	3	1	2,116	90	20
631	Food Stores	n.a.	87,600	100	45	85,000	97		Expert Interviews Only			
642	General Merchandise Stores	n.a.	92,000	100	12	76,000	83		Expert Interviews Only			
853	Computer Services	n.a.	16,775	20	41	11,800	70	6		291	90	17
867	Management and Business Consultants	n.a.	10,975	20	40	5,900	54	8		1,070	95	6

APPENDIX D

HISTORICAL TABLES

LIFE INSURANCE PAGE D.1

GENERAL INSURANCE PAGE D.13

INSURANCE AGENTS AND BROKERS PAGE D.16

TABLE D.1

LIST OF MAJOR LIFE INSURANCE COMPANIES IN ONTARIO

NAME	SHARE OF MARKET* IN 1981 ONTARIO	 CANADA
Mutual Life Assurance of Canada	9.8	8.9
Sun Life of Canada	9.1	9.5
Manufacturers Life of Canada	8.6	7.4
Canada Life Assurance	8.4	6.3
London Life	8.0	6.0
Great West Life	5.7	6.6
Confederation Life	5.0	4.8
Standard Life Assurance	4.8	3.6
Metropolitan Life	3.7	3.8
North American Life Assurance	3.5	2.8
Prudential of England	3.0	2.5
Combined market share	69.6	62.2

* Share of total direct premium income.

SOURCE: Annual Report of the Superintendent of Insurance of Ontario, 1982.

TABLE D.2

DISTRIBUTION OF PERSONAL SAVINGS, BY TYPE OF INSTITUTION

	1976	1977	1978	1979	1980	1981	1982	1983
				(PERCENT DISTRIBUTION)				
Chartered Banks * Adjusted to include mortgage loan subsidiaries	29.8	29.0	28.7	30.4	30.4	30.4	29.4	27.1
Trust and Mortgage Loan Companies	15.2	15.6	15.8	16.1	17.0	17.3	17.6	18.7
Bank Mortgage Subsidiaries	1.0	1.2	1.2	1.2	2.0	2.8	3.6	4.7
Subtotal: Trust and Mortgage Loan Companies excluding bank subsidiaries	14.2	14.4	14.6	14.9	15.0	14.5	14.0	14.0
Local Credit Unions	9.7	10.5	11.1	10.8	10.7	9.8	9.2	9.0
Investment Funds	1.5	1.5	1.5	1.4	1.3	1.3	1.2	1.4
Government Saving Banks	1.5	1.5	1.5	1.6	1.7	1.7	1.6	1.7
Trusteed Pension Plans	16.6	16.9	17.2	17.9	19.1	19.7	20.5	21.5
Canada Savings Bonds	11.0	10.6	10.1	8.1	6.7	8.4	9.7	10.6
Trust Companies Retirement Savings Funds	-	0.2	0.2	0.2	0.2	0.1	0.2	0.1
Segregated Funds	2.0	2.1	2.3	2.4	2.6	2.3	2.4	2.6
Life Insurance	13.7	13.3	12.8	12.4	12.2	11.8	11.7	11.9
TOTAL ($ BILLION)	150.1	173.0	200.4	232.7	263.6	304.6	340.5	374.9

* Chartered bank data include deposits of mortgage subsidiaries, which are then excluded from mortgage loan companies.

NOTE: Details may not add to totals due to rounding.

SOURCE: Statistics Canada. Financial Institutions, Cat. No. 61-006, Table 127 plus special tabulations. Bank mortgage affiliate data comes from Bank of Canada Review, Table 42.

TABLE D.3

EXAMPLES OF INSTITUTIONAL NETWORKING IN CANADA

AFFILIATIONS	INSTITUTIONS					
	Banks & Savings Banks	Trust Companies	Credit Unions	Life Companies	Investment Counsel	Other
Canadian Pioneer Management Ltd.		Pioneer Trust		Pioneer Life	Pioneer Securities	
Crownx		Coronet Trust North Canadian Trust		Crown Life	Private Ledger Financial Services (U.S.) Beutel Goodman & Co. Ltd.	
Eaton-Bay Financial Services		Eaton-Bay Trust		Eaton-Bay Life		
E-L Financial Corporation		National Victoria & Grey Trust		Empire Life		
		Premier Trust		Dominion of Canada General		
Groupe Pret & Revenue		Fiducie Pret & Revenue		AEterna Life		
Laurentian Group	Montreal City & District Savings Bank	Credit Foncier		Imperial Life	Geoffrion & Leclerc	
Manufacturers Life				Dominion Life		
Morgan Bancorp		Morgan Trust		Westbury Life		
Power Financial Corporation		Montreal Trust		Great-West Life		
Principal Group Ltd.		Principal Trust		Principal Life	Principal Securities	
Traders Group		Guaranty Trust		Canadian General Life		
Trilon Financial Corporation		Royal Trust		London Life		Fireman's Fund Insurance Co. of Canada

SOURCE: Canadian Life and Health Insurance Association, Updated by Economics Practice of Currie, Coopers & Lybrand.

TABLE D.4

INDUSTRY INDICATORS: LIFE INSURANCE COMPANIES IN ONTARIO

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
							(MILLIONS OF CURRENT DOLLARS)						
AGGREGATE OUTPUT													
Direct Premiums Written													
Assurance Premiums	624	653	703	751	822	927	971	1,055	1,128	1,221	1,329		
Annuity Considerations	285	376	475	526	644	788	900	1,055	1,142	1,487	2,084		
TOTAL	909	1,029	1,178	1,277	1,467	1,715	1,871	2,110	2,269	2,707	3,412		
							(PERCENT CHANGE)						
Direct Premiums Written													
Assurance Premiums	-	4.6	7.7	6.8	9.5	12.8	4.7	8.7	6.9	8.2	8.8		
Annuity Considerations	-	31.9	26.3	10.7	22.4	22.4	14.2	17.2	8.2	30.2	40.1		
TOTAL	-	13.2	14.5	8.4	14.9	16.9	9.1	12.8	7.5	19.3	26.0		
							(NUMBER)						
EMPLOYMENT													
Estimated Employment	24,520	24,500	25,150	25,220	25,930	25,210	24,880	25,650	27,210	28,020	32,110	32,160	31,200
							(PERCENT CHANGE)						
		-0.1	2.7	0.4	2.8	-2.8	-1.3	3.1	6.1	3.0	14.6	0.2	-3.0

NOTE: Details may not add to totals due to rounding.

SOURCE: Annual Reports of the Superintendent of Insurance (Ontario) and Estimates by the Canadian Life and Health Association Inc.

TABLE D.5

INDUSTRY INDICATORS: (SIC 721) INSURANCE CARRIERS IN CANADA

(CONSTANT 1971 DOLLARS AND PERCENT CHANGE)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
							(CONSTANT 1971 DOLLARS)							
AGGREGATE OUTPUT														
Gross Domestic Product At Factor Cost ($ Million)	767.2	817.1	860.0	915.2	953.6	1,019.0	1,099.7	1,185.8	1,215.9	1,242.3	1,486.5	1,589.9	1,542.1	NA
OUTPUT PER EMPLOYEE														
GDP Per Paid Employee ($ per employee)	9,600	10,770	12,040	12,540	12,920	13,360	13,300	13,200	13,380	13,850	15,860	16,080	16,280	NA
EMPLOYMENT														
Total Paid Employees (000's)	79.9	75.9	71.4	73.0	73.8	76.3	82.7	89.8	90.9	89.7	93.7	98.9	94.7	92.0
							(PERCENT CHANGE)							
AGGREGATE OUTPUT														
GDP At Factor Cost	-	6.5	5.3	6.4	4.2	6.9	7.9	7.8	2.5	2.2	19.7	7.0	(3.0)	-
OUTPUT PER EMPLOYEE														
GDP Per Paid Employee	-	12.2	11.8	4.2	3.0	3.4	(0.4)	(0.8)	1.4	3.5	14.5	1.4	1.2	-
EMPLOYMENT														
Total Paid Employees	-	(5.0)	(5.9)	2.2	1.1	3.4	8.4	8.6	1.2	(1.3)	4.5	5.5	(4.2)	(2.9)

NA Not Available

() Indicates decline.

SOURCE: Statistics Canada, Gross Domestic Product by Industry, Cat. No. 61-213, and Employment, Earnings and Hours, Cat. No. 72-002.

TABLE D.6

CAPITAL EXPENDITURES FOR INSURANCE, TRUST AND LOAN COMPANIES
CANADA AND ONTARIO

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982^A	1983^P	1984^{RI}
	(MILLIONS OF CURRENT DOLLARS)													
CANADA														
Construction	25.8	34.0	30.8	45.6	49.0	60.0	74.8	98.6	73.1	69.4	107.5	100.5	78.2	96.5
Machinery & Equipment	19.5	15.9	25.9	32.4	34.3	64.2	58.9	75.1	86.4	68.3	80.0	98.1	127.9	98.2
TOTAL	45.3	49.9	56.7	78.0	83.3	124.2	133.7	173.7	159.5	137.7	187.5	198.6	206.1	194.7
ONTARIO														
Construction	NA	NA	NA	NA	NA	NA	NA	31.2	35.3	44.8	39.9	45.3	48.7	64.3
Machinery & Equipment	NA	NA	NA	NA	NA	NA	NA	43.1	34.4	43.0	53.2	66.0	72.5	62.7
TOTAL	NA	NA	NA	NA	NA	NA	NA	74.3	69.7	87.8	93.1	111.3	121.2	127.0
	(PERCENT CHANGE)													
CANADA														
Construction	-	31.8	(9.4)	48.1	7.5	22.4	24.7	31.8	(25.9)	(5.1)	54.9	(6.5)	(22.2)	23.4
Machinery & Equipment	-	(18.5)	62.9	25.1	5.9	87.2	(8.3)	27.5	15.0	(20.9)	17.1	22.6	30.4	(23.2)
TOTAL	-	10.2	13.6	37.6	6.8	49.1	7.6	29.9	(8.2)	(13.7)	36.2	5.9	3.8	(5.5)
ONTARIO														
Construction	-	-	-	-	-	-	-	-	13.1	26.9	(10.9)	13.5	7.5	32.0
Machinery & Equipment	-	-	-	-	-	-	-	-	(20.2)	25.0	23.7	24.1	9.8	(13.5)
TOTAL	-	-	-	-	-	-	-	-	(6.2)	26.0	6.0	19.5	8.9	4.8

A Actual

P Preliminary

RI Revised intentions

() Indicate decline.

SOURCE: Statistics Canada, Private and Public Investment In Canada, Cat. No. 61-205.

TABLE D.7

CAPITAL EXPENDITURES FOR INSURANCE, TRUST AND LOAN COMPANIES
CANADA AND ONTARIO

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982^{A}	1983^{P}	1984^{RI}
							(MILLIONS OF CONSTANT 1971 DOLLARS)							
CANADA														
Construction	25.8	32.2	26.9	34.3	32.8	37.7	44.3	54.6	36.9	31.3	43.4	37.0	27.5	32.8
Machinery & Equipment	19.5	15.5	24.2	26.6	24.7	43.7	36.8	42.0	43.9	31.5	33.0	37.5	47.5	34.6
TOTAL	45.3	47.7	51.1	60.9	57.5	81.4	81.1	96.6	80.8	62.8	76.4	74.5	75.0	67.4
ONTARIO														
Construction	NA	NA	NA	NA	NA	NA	NA	17.3	17.8	20.2	16.1	16.7	17.1	21.9
Machinery & Equipment	NA	NA	NA	NA	NA	NA	NA	24.1	17.5	19.8	22.0	25.2	26.9	22.1
TOTAL	NA	NA	NA	NA	NA	NA	NA	41.4	35.3	40.0	38.1	41.9	44.0	44.0
								(PERCENT CHANGE)						
CANADA														
Construction	-	24.8	(16.5)	27.5	(4.4)	14.9	17.5	23.3	(32.4)	(15.2)	38.7	(14.7)	(25.7)	19.3
Machinery & Equipment	-	(20.5)	56.1	9.9	(7.1)	76.9	(15.8)	14.1	4.5	(28.2)	4.8	13.6	26.7	(27.2)
TOTAL	-	5.3	7.1	19.2	(5.6)	41.6	(0.4)	19.1	(16.4)	(22.3)	21.7	(2.5)	0.7	(10.1)
ONTARIO														
Construction	-	-	-	-	-	-	-	-	2.9	13.5	(20.3)	3.7	2.4	28.1
Machinery & Equipment	-	-	-	-	-	-	-	-	(27.4)	13.1	11.1	14.5	6.7	(17.8)
TOTAL	-	-	-	-	-	-	-	-	(14.7)	13.3	(4.8)	10.0	5.0	0.0

NA Not available

() Indicates decline

SOURCE: Statistics Canada, Private and Public Investment In Canada, Cat. No. 61-205.
Annual Construction spending deflated by the Implicit Price Index for Business,
Non-Residential Construction and Machinery and Equipment spending deflated by the
Implicit Price Index for Business, Machinery and Equipment both from Statistics Canada,
National Income & Expenditure Accounts, Cat. No. 13-201.

TABLE D.8

OCCUPATIONAL INDICATORS: INSURANCE CARRIERS

RANKING BY RELATIVE STRENGTH

		NUMBER OF EMPLOYEES 1981	AVERAGE ANNUAL RATE OF CHANGE PERCENT 1971 - 1981
I	TOTAL INDUSTRY	46,135	3.2
II	TWO DIGIT LEVEL		
	CLERICAL AND RELATED	21,525	2.0
	SALES	13,840	2.7
	MANAGERIAL, ADMINISTRATIVE AND RELATED	5,575	9.2
	NATURAL SCIENCES, ENGINEERING AND MATHEMATICS	2,995	10.3
III	FOUR DIGIT LEVEL		
	CLERICAL AND RELATED		
	Supervisors, Other Clerical and Related, n.e.c.	605	(5.8)
	Typists and Clerk-Typists	2,155	(1.9)
	General Office Clerks	1,580	1.5
	Secretaries and Stenographers	3,545	2.2
	Library and File Clerks	1,120	2.3
	Insurance, Banks and Other Finance Clerks	3,165	3.3
	Bookkeepers and Accounting Clerks	2,600	4.1
	Electronic Data-Processing Equipment Operators	1,970	7.0
	TOTAL	21,525	2.0
	SALES		
	Supervisors: Sales, Services	1,800	(0.8)
	Insurance Salesmen and Agents	11,770	3.9
	TOTAL	13,840	2.7

TABLE D.8 (cont'd)

OCCUPATIONAL INDICATORS: INSURANCE CARRIERS

RANKING BY RELATIVE STRENGTH

	NUMBER OF EMPLOYEES 1981	AVERAGE ANNUAL RATE OF CHANGE PERCENT 1971 - 1981
MANAGERIAL, ADMINISTRATIVE AND RELATED		
Accountants, Auditors and Other Financial Officers	1,240	7.8
Financial Management	1,265	16.9
TOTAL	5,575	9.2
NATURAL SCIENCES, ENGINEERING AND MATHEMATICS		
Systems Analysts, Computer Programmers and Related	2,220	10.6
TOTAL	2,995	10.3

() Indicates decline.

NOTE: Details do not add to totals as all occupations are not included.

SOURCE: Census data, Ontario Ministry of Labour.

TABLE D.9

OCCUPATIONAL INDICATORS: INSURANCE CARRIERS

RANKING BY INCREASE IN FEMALE REPRESENTATION

		FEMALES EMPLOYED	FEMALE EMPLOYMENT AS A PERCENT OF TOTAL		NUMBER OF JOBS GAINED BY FEMALES
		1981	1971	1981	1971-1981
I.	TOTAL INDUSTRY	28,325	53.1	61.4	10,400
II.	TWO DIGIT LEVEL				
	NATURAL SCIENCES, ENGINEERING AND MATHEMATICS	1,095	22.7	36.6	840
	MANAGERIAL, ADMINISTRATIVE AND RELATED	1,595	14.7	28.6	1,255
	CLERICAL AND RELATED	18,985	84.4	88.2	4,055
	SALES	5,590	14.0	40.4	4,105
III.	FOUR DIGIT LEVEL				
	NATURAL SCIENCES, ENGINEERING AND MATHEMATICS				
	Systems Analysts, Computer Programmers and Related	850	26.5	38.3	635
	TOTAL	1,095	22.7	36.6	840
	MANAGERIAL, ADMINISTRATIVE AND RELATED				
	Financial Management	230	0.0	18.2	230
	Accountants, Auditors and Other Financial Officers	435	17.9	35.1	330
	TOTAL	1,595	14.7	28.6	1,225
	CLERICAL AND RELATED				
	Typists and Clerk-Typists	2,105	99.0	97.7	(485)
	Supervisors, Other Clerical and Related, n.e.c.	420	52.3	69.4	(155)
	Library and File Clerks	1,015	92.7	90.6	185
	General Office Clerks	1,420	85.6	89.9	260

TABLE D.9 (cont'd)

OCCUPATIONAL INDICATORS: INSURANCE CARRIERS

RANKING BY INCREASE IN FEMALE REPRESENTATION

	FEMALES EMPLOYED 1981	FEMALE EMPLOYMENT AS A PERCENT OF TOTAL 1971	FEMALE EMPLOYMENT AS A PERCENT OF TOTAL 1981	NUMBER OF JOBS GAINED BY FEMALES 1971-1981
CLERICAL AND RELATED (cont'd)				
Secretaries and Stenographers	3,530	97.7	99.6	755
Electronic Data-Processing Equipment Operators	1,570	70.1	79.7	865
Bookkeepers and Accounting Clerks	2,320	81.3	89.2	905
Insurance, Bank and Other Finance Clerks	2,885	81.8	91.2	1,020
TOTAL	18,985	84.4	88.2	4,055
SALES				
Supervisors: Sales, Services	615	6.7	34.2	485
Insurance Salesmen and Agents	4,885	15.9	41.5	3,610
TOTAL	5,590	14.0	40.4	4,105

() Indicates decline.

NOTE: Females employed in 1981 is calculated from percent of total.
Details do not add to totals as all occupations are not included.

SOURCE: Census data, Ontario Ministry of Labour.

TABLE D.10

TOTAL PREMIUMS AND LOSSES IN GENERAL INSURANCE IN ONTARIO, 1981

	Direct Premiums Written	Direct Losses and Adjustment Expenses	Ratio of Losses and Expenses to Premiums	Percent Distribution of Premiums Written
	- $ million -		Percent	Percent
Automobile	1,508	1,273	84.4	40.6
Accident and Sickness	940	821	87.3	25.3
Property	928	638	68.7	25.0
Liability	222	142	63.8	6.0
Other*	120	80	66.7	3.2
TOTAL	3,718	2,954	79.5	100.0

* Other includes marine, boiler and machinery, aircraft, fidelity, surety, mortgage, hail and so on.

SOURCE: Annual Report of the Superintendent of Insurance for Ontario, 1982

TABLE D.11

MAJOR* GENERAL INSURANCE COMPANIES IN ONTARIO, 1981

	AUTOMOBILE PREMIUMS	PROPERTY PREMIUMS	ACCIDENT & SICKNESS
		$ MILLION	
Allstate	66,756	26,683	-
Commercial Union	63,008	35,956	5,884
Cooperators Insurance	151,767	25,698	1,179
Fireman's Fund	50,593	21,001	-
Royal Insurance	118,133	56,375	563
State Farm Mutual	87,961	22,119	2
Zurich Insurance Company	56,533	27,109	6,448
Sub-Total	594,751	214,941	14,076
Total for Ontario	1,508,216	928,059	940,429
Seven Companies' Share of Total	39.4%	23.2%	1.5%

* Companies writing more than $ 50 million premiums in automobile insurance in 1981.

SOURCE: Annual Report of the Superintendent of Insurance for Ontario, 1982.

TABLE D.12

INCOME OF THE GENERAL INSURANCE INDUSTRY, CANADA

(FEDERALLY REGISTERED COMPANIES ONLY)

	Underwriting Income*	Investment Income	Combined Income
		- $ Million -	
1973	-138,683	189,804	51,121
1974	-266,759	229,715	-37,044
1975	-127,635	262,274	134,638
1976	- 39,044	340,012	300,968
1977	43,042	412,916	455,957
1978	44,353	528,382	572,735
1979	-173,478	630,691	457,213
1980	-503,416	728,901	225,485
1981	-871,722	878,403	6,681
1982	-532,500	995,100	462,600

* Underwriting income is premiums written less claims paid and underwriting expenses. A minus sign indicates a loss.

SOURCE: Facts of the General Insurance Industry in Canada, 11th edition, p. 23. Based on Reports of the Superintendent of Insurance for Canada.

TABLE D.13

INDUSTRY INDICATORS: GENERAL INSURANCE IN ONTARIO

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
							($ MILLION CURRENT)					
AGGREGATE OUTPUT												
Direct Premiums for Property & Casualty Insurance	756	856	966	1,115	1,397	1,712	1,997	2,092	2,158	2,378	2,778	
Direct Premiums for Accident and Health Insurance	187	223	261	315	343	443	485	577	676	811	940	
TOTAL	943	1,079	1,227	1,430	1,741	2,155	2,482	2,669	2,834	3,189	3,718	
EMPLOYMENT							(NUMBER)					
Company Employees*	NA	NA	NA	NA	NA	16,300	18,500	19,000	19,500	20,475	20,510	20,000
							(PERCENT CHANGE)					
AGGREGATE OUTPUT												
Direct Premiums for Property and Casualty Insurance		13.2	12.9	15.4	25.3	22.5	16.6	4.8	3.2	10.2	16.8	
Direct Premiums for Accident and Health Insurance		19.3	17.0	20.7	8.9	29.2	9.5	19.0	17.2	20.0	15.9	
TOTAL		14.4	13.7	16.5	21.7	23.8	15.2	7.5	6.2	12.5	16.6	
EMPLOYMENT												
Company Employees							13.5	2.7	2.6	5.0	1.7	(2.5)

NA: Not available.

( ) Indicates decline.

* Excludes adjusters, brokers and others operating from independent offices.

NOTE: Details may not add to totals due to rounding.

SOURCE: Annual Reports of the Superintendent of Insurance for Ontario and Insurance Bureau of Canada, Facts of the General Insurance Industry in Canada.

TABLE D.14

CANADA'S LEADING PROPERTY/CASUALTY INSURANCE BROKERS

(RANKED ACCORDING TO 1981 REVENUES*)

	Estimated 1981 Revenues ($ Million)	Ownership (Percent Canadian)	Location of Business	Head Office
Reed Stenhouse**	84	48	National	Toronto
Marsh & McLennan	43	0	National	Toronto
Dale & Co - Sodarcan	37	100	National	Toronto-Montreal
Tomenson Saunders - Whitehead	33	75	National	Toronto
Johnson & Higgins - Willis Faber	23	0	National except Newfoundland	Toronto
Sedgwick Alexander**	11	0	Quebec, Ontario & West	Toronto
Morris & Mackenzie	6	100	Quebec, Ontario & West	Toronto
Richards Melling	6	54	Quebec, Ontario & West	Montreal
Thompson Osen & Sherban	5	100	West	Vancouvers
Johnson's Ltd.	5	100	Quebec, Ontario & East	St. John'
Total	253			

* Canadian revenues from all sources except employee benefit consulting.

** Reed Stenhouse and Sedgwick Alexander will be merged in 1985 as a result of the merger of Reed Stenhouse with one of the largest brokers in the United States.

SOURCE: Frank Dougan, "How and Why Canada Cured Its Broker Acquisition Fever," Risk Management, March, 1983

TABLE D.15

EMPLOYMENT BY CANADIAN INSURANCE BROKERS AND AGENTS

	Number in 1983
Principals (capable of running an office)	9,600
Licensed brokers (capable of giving insurance advice)	9,600
Other Licensed Staff*	8,300
Non-Licensed Staff*	27,100
Total Employees	54,600**
Number of offices in Canada	9,090

* The distinction between licensed and unlicensed staff varies according to provincial regulations. Ontario requires registration of all employees who serve the public so it has a higher proportion of licensed support staff than does Canada.

** About 10 percent of these employees handle insurance other than property and casualty.

SOURCE: Canadian Federation of Insurance Agents and Brokers Associations.

TABLE D.16

INDUSTRY INDICATORS: INSURANCE BROKERS AND AGENTS IN ONTARIO

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
							($ MILLION CURRENT)							
AGGREGATE OUTPUT														
Direct Premiums for Property and Casualty Insurance	756.7	856.7	965.9	1,114.7	1,397.4	1,711.9	1,997.1	2,092.0	2,158.0	2,377.8	2,777.8			
Estimated Commissions of Brokers and Agents*			161	178	222	248	283	324	322	335	378			
Estimated Commission Rate** (Percent)			16.7	16.0	15.9	14.5	14.2	15.5	14.9	14.1	13.6	13.6	14.3	
							(NUMBER)							
EMPLOYMENT														
Estimated Number of Agents, Brokers and Employees						12,000	12,500	12,650	12,750	12,800	13,050	20,000[e]		
Registered Brokers														
Licensed Agents												2,800[f]	2,100[f]	2,700[f]

* Based on estimated commission rate for Canada applied to direct premiums written in Ontario.

** Average rate calculated from commissions paid by Canadian companies as a percent of direct premiums written in Canada.

e Number for 1982 is based on extrapolations from survey data. Earlier years were based on rough guesses. Change in Ontario law made registration and licensing stricter in 1982.

f Ontario Department of Insurance is unable to account for volatile movements in this series. Figures are for the fiscal year.

SOURCE: Statistics Canada, Financial Institutions, Cat. No. 61-006; Insurance Bureau of Canada, Ontario Department of Insurance and Federal Department of Insurance.

TABLE D.17

INDUSTRY INDICATORS: INSURANCE BROKERS AND AGENTS IN ONTARIO
(PERCENT CHANGE)

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
AGGREGATE OUTPUT											
Direct Premiums for Property and Casualty Insurance	13.2	12.7	15.4	25.4	22.5	16.7	4.8	3.2	10.2	16.8	
Estimated Commissions of Brokers & Agents	-	-	10.6	24.7	11.7	14.1	14.5	(0.6)	4.0	12.8	
EMPLOYMENT											
Estimated Number of Agents, Brokers & Employees						4.2	1.2	0.8	0.4	2.0	53.3
Registered Brokers											
Licensed Agents											

SOURCE: Calculated from Table D.16.

TABLE D.18

OCCUPATIONAL INDICATORS: INSURANCE AND REAL ESTATE BROKERS AND AGENTS

RANKING BY RELATIVE STRENGTH

		NUMBER OF EMPLOYEES 1981	AVERAGE ANNUAL RATE OF CHANGE PERCENT 1971 - 1981
I	TOTAL INDUSTRY	47,075	4.4
	TOTAL INDUSTRY, EXCLUDING REAL ESTATE SALES	31,315	3.2
II	TWO DIGIT LEVEL		
	SALES (EXCLUDING REAL ESTATE)	11,620	2.4
	CLERICAL AND RELATED	13,715	3.2
	NATURAL SCIENCES, ENGINEERING AND MATHEMATICS	470	4.9
	MANAGERIAL, ADMINISTRATIVE AND RELATED	3,585	5.5
III	FOUR DIGIT LEVEL		
	SALES (EXCLUDING REAL ESTATE)		
	Supervisors, Sales, Services	3,155	(1.5)
	Insurance Salesmen and Agents	8,060	5.2
	TOTAL	11,620	2.4
	CLERICAL AND RELATED		
	Typists and Clerk-Typists	1,540	0.8
	Secretaries and Stenographers	4,760	3.8
	Bookkeepers and Accounting Clerks	2,445	6.5
	TOTAL	13,715	3.2

() Indicates decline.

NOTE: Details do not add to totals as all occupations are not included.

SOURCE: Census data, Ontario Ministry of Labour.

TABLE D.19

OCCUPATIONAL INDICATORS: INSURANCE AND REAL ESTATE BROKERS AND AGENTS

RANKING BY INCREASE IN FEMALE REPRESENTATION

		FEMALES EMPLOYED	FEMALE EMPLOYMENT AS A PERCENT OF TOTAL		NUMBER OF JOBS GAINED BY FEMALES
		1981	1971	1981	1971-1981
I.	TOTAL INDUSTRY	24,290	42.4	51.6	11,255
	TOTAL INDUSTRY, EXCLUDING REAL ESTATE SALES	17,985	48.7	57.4	6,910
II.	TWO DIGIT LEVEL				
	NATURAL SCIENCES, ENGINEERING AND MATHEMATICS	135	17.2	28.7	85
	MANAGERIAL, ADMINISTRATIVE AND RELATED	1,150	24.3	32.1	640
	SALES (EXCLUDING REAL ESTATE)	3,120	12.7	26.9	1,965
	CLERICAL AND RELATED	12,795	89.4	93.3	3,870
III.	FOUR DIGIT LEVEL				
	SALES (EXCLUDING REAL ESTATE)				
	Supervisors: Sales, Services	450	9.2	14.3	110
	Insurance Salesmen and Agents	2,540	14.2	31.5	1,850
	TOTAL	3,120	12.7	26.9	1,965
	CLERICAL AND RELATED				
	Typists and Clerk-Typists	1,525	98.9	99.0	115
	Bookkeepers and Accounting Clerks	2,200	88.1	90.0	1,050
	Secretaries and Stenographers	4,750	98.6	99.8	1,520
	TOTAL	12,795	89.4	93.3	3,870

NOTE: Females employed in 1981 is calculated from percent of total.
Details do not add to totals as all occupations are not included.

SOURCE: Census data, Ontario Ministry of Labour

FINAL REPORT AND APPENDICES OF THE ONTARIO TASK FORCE ON EMPLOYMENT AND NEW TECHNOLOGY

Final Report	Employment and New Technology

Appendices:

1. Labour Market Trends in Ontario, 1950-1980
2. Occupational Employment Trends in Ontario, 1971-1981
3. Emerging New Technology, 1985-95: Framework for a Survey of Firms
4. Employment and New Technology in Ontario's Manufacturing Sector: A Summary of Selected Industries
5. Employment and New Technology in the Iron and Steel Industry
6. Employment and New Technology in the Metal Fabricating Industry
7. Employment and New Technology in the Machinery and Equipment Industry
8. Employment and New Technology in the Aircraft and Aircraft Parts Industry
9. Employment and New Technology in the Communications Equipment Industry
10. Employment and New Technology in the Office, Store and Business Machine Industry
11. Employment and New Technology in the Plastic Processing Industry
12. Employment and New Technology in Ontario's Service Sector: A Summary of Selected Industries
13. Employment and New Technology in the Chartered Banks and Trust Industry
14. Employment and New Technology in the Insurance Industry
15. Employment and New Technology in the Government Services Industry
16. Employment and New Technology in the Telecommunications Industry
17. Employment and New Technology in the Retail Trade Industry
18. Employment and New Technology in the Computer Services and Management Consulting Industry
19. Industry-Sector and Occupational Employment in Ontario, 1985-1995
20. Technological Change, Productivity, and Employment: Studies of the Overall Economy